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Baseline Ecological Risk Assessment

Operable Unit 3, Horseshoe Road and Atlantic Resources Corporation Sites, Sayreville, New Jersey

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Prepared for

ARC OU-3 Cooperating Group
c/o Robertson, Freilich, Bruno & Cohen LLC
One Riverfront Plaza, Fourth Floor
Newark, NJ 07102

Prepared by

Exponent
15375 SE 30th Place, Suite 250
Bellevue, WA 98007

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Acronyms and Abbreviations

2,3,7,8-TCDD	2,3,7,8-tetrachlorodibenzo-*p*-dioxin
ADC	Atlantic Development Corporation
AET	apparent effects threshold
AETQ	apparent effects threshold quotient
ANOVA	analysis of variance
AOC	Administrative Order on Consent
ARC	Atlantic Resources Corporation
BERA	baseline ecological risk assessment
CoPC	chemical of potential concern
CSM	conceptual site model
EPA	U.S. Environmental Protection Agency
ERA	ecological risk assessment
ERM	effect range median
ERT	Environmental Response Team
HRDD	Horseshoe Road Drum Dump
LAET	lowest apparent effects threshold
LOAEL	lowest-observed-adverse-effect level
MCUA	Middlesex County Utilities Authority
NJDEP	New Jersey Department of Environmental Protection
NOAEL	no-observed-adverse-effect level
NPL	National Priorities List
OU-3	Operable Unit 3
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCDD/F	polychlorinated dibenzo-*p*-dioxin and polychlorinated dibenzofuran
PEC	probable effect concentration
ppt	parts per thousand
ROD	record of decision
SEL	severe effect level
SLERA	screening level ecological risk assessment
SPD	Sayreville Pesticide Dump
SQG	sediment quality guideline
SQV	sediment quality value
SVOC	semivolatile organic compound
TAL	target analyte list
TCE	trichloroethene
TCL	target compound list
TEF	toxicity equivalence factor
TEQ	toxicity equivalent
the Sites	the Horseshoe Road and Atlantic Resources Corporation Superfund Sites
TOC	total organic carbon
TRV	toxicity reference value
USFWS	U.S. Fish and Wildlife Service

VOC	volatile organic compound
WHO	World Health Organization

Executive Summary

In 2003, a group of cooperating parties signed an Administrative Order on Consent (AOC) to conduct a supplemental field investigation, baseline ecological risk assessment (BERA), and feasibility study for Operable Unit 3 (OU-3) of the Horseshoe Road and Atlantic Resource Corporation Superfund Sites in Sayreville, New Jersey. This document presents the findings of the supplemental field investigation conducted in 2004 and the OU-3 baseline ecological risk assessment completed for that AOC.

The overall objective of the 2004 supplemental field investigation was to characterize the area of OU-3 to support the BERA and feasibility study. The investigation included collection of surface sediment and biota in the marsh and Raritan River for chemical analysis as well as sediment toxicity and bioaccumulation testing. The sediment data supported earlier conclusions regarding the nature and extent of contamination in OU-3 and the transport and fate of contaminants. The data also highlighted the importance of the SPD/ADC drainage channel as a primary conduit of arsenic, mercury, and PCBs from upland areas of the Sites into the marsh and the Raritan River. Concentrations of these contaminants were substantially lower in sediments associated with the ADC/ARC/HRDD and the ARC/HRDD drainages and areas in the marsh downstream of these drainages. Arsenic, mercury, and PCB concentrations remained high in the SPD/ADC drainage for quite a distance into the marsh before decreasing and were generally much lower in river surface sediment than in the surface sediment of the SPD/ADC drainage. The highest concentrations of these contaminants in river sediment were generally observed near where the SPD/ADC drainage enters the river.

The BERA investigated risks to various components of the ecological community in the OU-3 marsh and adjoining Raritan River. The following assessment endpoints were evaluated:

- Aquatic and terrestrial invertebrate community abundance and population production
- Estuarine fish population abundance and community structure
- Abundance of avian and mammalian populations.

The measurement endpoints included sediment toxicity tests to assess potential risk to aquatic macroinvertebrates and terrestrial invertebrates, CoPC concentrations in estuarine fishes compared to literature-based effect-level thresholds to assess potential risk to estuarine fishes, and food-web modeling to assess potential risk to birds and mammals.

In the OU-3 marsh, the BERA found that while there is little potential for widespread adverse effects on survival of (i.e., lethal toxicity to) aquatic and terrestrial invertebrates, there is a potential for adverse effects on growth of individual aquatic and terrestrial invertebrates in localized areas. Risks of sublethal growth effects were greatest in the SPD/ADC and ADC/ARC/HRDD drainage channels, where contaminant concentrations were the highest.

Similarly, there is potential for adverse effects on individuals of avian and mammalian invertivore receptor species in the drainage channels of the marsh where contaminant concentrations are elevated. In particular, arsenic, mercury, and/or PCBs were identified as the primary risk drivers for avian and mammalian receptors. Risk was relatively low for mammalian herbivore receptors that are assumed to forage over the entire marsh, and negligible for avian carnivores with home ranges larger than the area of the marsh.

While potential risks were identified for individual invertebrates as well as some individual avian and mammalian receptors, it is uncertain if these potential risks translate to population level effects, which are the assessment endpoints. There is additional uncertainty to the extent that risks determined from sediment data collected primarily in drainage channels are translated to the entire marsh or to areas of the marsh between drainage channels where contaminant concentrations are expected to be lower. Also, while CoPC concentrations may be an important factor on a localized basis, factors such as the suitability of periodically inundated and primarily *Phragmites* marsh as habitat for receptors, particularly shrews and other small mammals, may be important determinants of population abundance and distribution when the OU-3 marsh is considered as a whole.

In the Raritan River portion of OU-3, the BERA found that there is a negligible likelihood of adverse effects to fish and wildlife populations. However, the SLERA addendum (CRA 2002b) noted the potential for localized adverse effects on benthic organisms from contaminated Raritan River sediment in the area immediately adjacent to where the main drainage channel for the marsh (i.e., the SPD/ADC drainage) enters the river.

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1 Introduction

This document reviews historical data, presents the 2004 supplemental investigation data, and provides the assessment of ecological risk at Operable Unit 3 (OU-3) of the Horseshoe Road and Atlantic Resources Corporation (ARC) Superfund Sites (collectively, the Sites) located in Sayreville, Middlesex County, New Jersey. OU-3 includes sediments in the marsh and intertidal portions of the Raritan River that are adjacent to the Sites. Exponent has performed this work on behalf of a group of cooperating parties under an Administrative Order on Consent (AOC), CERCLA-02-2003-2033.

1.1 Report Organization

This section of the document discusses site description, site regulatory history, summary information on the physical characteristics of OU-2 and OU-3, and the ecological characteristics of OU-3, based on previous reports and observations made during the supplemental field investigation in 2004.

Sections 2 through 8 of this document are organized as follows:

- Section 2—Summary of Historical Investigations
- Section 3—Results of the Supplemental Field Investigation
- Section 4—Problem Formulation for the Baseline Ecological Risk Assessment
- Section 5—Sediment Toxicity Assessment
- Section 6—Assessment of Estuarine Fishes
- Section 7—Wildlife Assessment
- Section 8—Interpretation of Ecological Significance
- Section 9—References.

The appendices provide technical supporting information and are organized as follows:

- Appendix A—Summary of 2004 Supplemental Field Investigation
- Appendix B—Data Quality Review for the 2004 Supplemental Field Investigation
- Appendix C—Chemical Data from the 2004 Supplemental Field Investigation

- Appendix D—Summary Statistics from the 2004 Supplemental Field Investigation
- Appendix E—Chemical Data from Historical Investigations
- Appendix F—Food-Web Model Tables
- Appendix G—Laboratory Reports for 2004 Sediment Toxicity Tests

1.2 Site Description

The Horseshoe Road and ARC Sites consist of four properties located in Sayreville, New Jersey. A vicinity map is provided in Figure 1-1, and a map of the Sites is included as Figure 1-2. Three of the properties (i.e., the Horseshoe Road Drum Dump [HRDD], the Atlantic Development Corporation [ADC], and the Sayreville Pesticide Dump [SPD]) are grouped together and considered one site (the Horseshoe Road Site) on the National Priorities List (NPL). The Horseshoe Road site is 12 acres in size. The fourth property, ARC, is 4.5 acres. It is located adjacent to the Horseshoe Road Site, and is also listed separately on the NPL.

The Sites are located on the southeast shore of the Raritan River and are bordered to the east by the Kearny Branch of the Raritan River Railroad (Conrail) and to the southeast by a residential neighborhood (approximately one-half mile away). Property to the west and south is currently undeveloped and includes a wetland and an area that was formerly used for disposal of dredged material from shipping lanes in the Raritan River (U.S. EPA 2004). Property owned by the Middlesex County Utilities Authority (MCUA) borders the Sites to the north and on the other side of the railroad tracks to the east.

The area surrounding the Sites is used for both residential and industrial purposes. While there are single-family homes and multi-residence buildings in the vicinity, in general, the area is industrial/commercial in character. Co-Steel Corporation operates a facility approximately one-half mile to the southwest. MCUA operates a wastewater treatment plant north of the Sites, and an MCUA trunk line and maintenance right of way cut through the ARC and ADC properties. The former NL Industries remediation site is also located to the north of the Sites (i.e., downstream along the Raritan River). Located approximately 3 miles upstream (southwest) of the Sites are three landfills that are no longer operating (the KinBuc landfill Superfund site, the Edison Township municipal landfill, and the ILR landfill), and the Middlesex County landfill, which continues to operate.

Various operations were conducted at the Sites over more than 30 years. The HRDD was used from approximately 1972 to the early 1980s for disposal. The ADC site contained three buildings and was active from the early 1950s until the late 1970s with limited operations into the early 1980s. At different times, operations at ADC included production of roofing materials, sealants, polymers, urethane and epoxy resins, resin pigments, wetting agents, pesticide intermediates, and recycled chlorinated solvents (U.S. EPA 2004). The SPD was used for disposal from 1957 through the early 1980s, and was named for alleged disposal of pesticides.

It is not clear when operations began at the ARC site (CDM 1999a). Various operations including precious metal recovery were alleged to occur between the late 1960s and the early 1980s. In addition, solvents and other materials were used to fuel the incinerators for the operations. From 1985 to the early 1990s, the U.S. Environmental Protection Agency (EPA) conducted ten removal actions at the Sites. These actions included drum removal, spill cleanup, disposal of material found in vats and storage tanks at the Sites, and excavation and disposal of contaminated material and debris (U.S. EPA 2004).

1.3 Site Regulatory History

EPA proposed the Horseshoe Road Site for inclusion on the NPL on May 10, 1993, and in February 1995 the New Jersey Department of Health issued a preliminary health assessment that concluded site conditions represented an indeterminate health hazard. The Horseshoe Road Site was formally placed on the NPL September 29, 1995.

In October 1997, EPA's contractor, CDM, initiated remedial investigation activities at the Horseshoe Road Site. ARC was initially included in the description of the Horseshoe Road Site, but based on the results of the remedial investigation and in response to a lawsuit by the potentially responsible parties, it was later removed and subsequently listed as a separate NPL site. ARC was proposed for inclusion on the NPL on September 25, 2001, and formally listed on September 5, 2002.

EPA has organized the work on the Sites into three Operable Units:

- OU-1: Demolition of buildings and above ground structures at both the ARC and ADC properties
- OU-2: Contaminated soil and groundwater at the Sites
- OU-3: River and marsh sediment.

The final remedial investigation report for the Horseshoe Road and ARC sites was completed in May 1999 (CDM 1999a) and a focused feasibility study for OU-1 was completed in September 1999 (CDM 1999b). EPA issued a record of decision (ROD) for OU-1 in September 2000. EPA demolished buildings associated with the ADC site pursuant to the OU-1 ROD. A group of cooperating parties demolished the ARC buildings pursuant to an Administrative Order on Consent (Index No. II-CERCLA-02-2001-2021) with an effective date of November 8, 2001. In addition, ancillary facilities at the ARC site were removed (e.g., baghouse filters, incinerators), along with three underground storage tanks. OU-1 demolition activities were completed in 2003. The Sites are currently vacant property.

The feasibility study for OU-2 was issued in September 2002 (CDM 2002a) and addenda were issued in July 2003 (CDM 2003) and January 2004 (CDM 2004). The July 2003 addendum addressed the technical impracticability issues associated with the limited potential for groundwater contaminant migration at the Sites. The January 2004 addendum revised the remedial alternatives and associated cost estimates to reflect the changes resulting from the technical impracticability determination.

The ROD for OU-2 was issued September 30, 2004 (U.S. EPA 2004), and required remediation of soils at the Sites. For each of the properties, arsenic and/or PCBs were identified as contributors to human health risk. On the ADC property, benzo[a]pyrene and 1,2-dichloroethane were also identified as contributors to human health risk for surface (i.e., above the groundwater table) and subsurface (i.e., below the groundwater table) soil, respectively. Remediation will include excavation of approximately 46,000 yd^3 of surface soil and debris, and approximately 16,000 cubic yards of subsurface soil from the SPD, ADC, and HRDD areas and the ARC site, followed by backfilling and grading. All contaminated soil, debris, and RCRA-hazardous waste will be transported, treated as necessary, and disposed offsite. The ROD did not require groundwater action because of the technical impracticability determination; however, excavation of contaminated soil is expected to reduce the potential contaminant load to groundwater. Long-term groundwater sampling and analysis will be conducted at the Sites to monitor the nature and extent of contamination, and to assess possible migration and attenuation. In addition, well installation and groundwater use will be restricted through institutional controls (i.e., Classification Exception Area).

In 2003, a group of cooperating parties signed an AOC to conduct a supplemental field investigation, baseline ecological risk assessment (BERA), and feasibility study for OU-3. This document presents the findings of the supplemental field investigation conducted in 2004 and the OU-3 BERA completed for this AOC.

1.4 Physical Characteristics of OU-2 and OU-3

OU-2 consists of the soil and groundwater at the SPD, ADC, HRDD, and ARC properties. These properties are also referred to as the upland areas because they are upgradient with respect to OU-3. Information on the physical characteristics of OU-2 is provided for context. OU-2 and OU-3 share the same geological characteristics, and the surface water drainage patterns that influence OU-3 originate in the upland areas.

OU-3, the subject of this BERA, consists of sediments in both the freshwater marsh and intertidal portion of the Raritan River located adjacent to the Sites. Information on climate, surface water hydrology, soils, and geology and hydrogeology from the remedial investigation report (CDM 1999a) and the feasibility study report (CDM 2002a) is summarized in this section.

1.4.1 Climate

Middlesex County, New Jersey, experiences a hot summer continental climate. As noted in the remedial investigation report (CDM 1999a), the average annual daily temperature for the site area was 53.9°F, the average summer temperature was 73°F, and the average winter temperature was 33°F for the 37-year period from 1961 to May 1998. Over this same period, the average annual rainfall was 47.02 in. and the average annual snowfall was 24.7 in. Precipitation is relatively evenly distributed throughout the year. Prevailing winds for the county are from the southwest and the highest average wind speeds (12 miles per hour) occur in March (CDM 1999a).

1.4.2 Surface Water Hydrology

The topography of OU-3 is relatively flat, with a slight grade toward the river. Several unnamed drainage channels originate in the upland areas and flow from southeast to northwest through the marsh. The New Jersey Department of Environmental Protection (NJDEP) classifies the water in these channels as FW2-NT (i.e., freshwater 2, not for trout production or maintenance). FW2 waters have the following designated uses: 1) maintenance, migration, and propagation of the natural and established biota, 2) primary and secondary contact recreation, 3) industrial and agricultural water supply, 4) public potable water supply after conventional filtration treatment and disinfection, and 5) any other uses (N.J.A.C 7:9B). The salinity of water in these channels ranges from zero to 0.8 ppt, which, because it is less than 3.5 ppt, NJDEP considers to be fresh water (N.J.A.C. 7:9B).

Three main drainage channels convey surface water from the upland portions of the Sites to the marsh area. These channels are located between the SPD and ADC properties (SPD/ADC drainage), between the ADC and ARC properties and the southwest side of the HRDD (ADC/ARC/HRDD drainage), and north of the ARC property on the northeast of the HRDD (ARC/HRDD drainage) (Figure 1-2). The drainages are visible as channels or streams, particularly during wet weather. Observations and measurements of these channels were made during the remedial investigation, as reported by CDM (1999a). As noted in the remedial investigation report (CDM 1999a) and the ROD for OU-2 (U.S. EPA 2004), these drainage channels act as conduits for contaminant transport from the OU-2 operation areas to the downgradient marsh and river (OU-3).

The SPD/ADC drainage channel is formed as several branches from the SPD and ADC sites converge and then flow through an underground culvert to the marsh and the Raritan River (CDM 1999a). The channel has some water flow in it throughout the year and therefore appears to be perennial. The channel is shallow, 2 to 5 ft in width, and has a silt and/or clay bottom. The pH of water in the channel ranges from 4.64 to 7.02.

The ADC/ARC/HRDD drainage channel is located between the ADC and ARC properties. It is visible along the west side of the HRDD before entering the marsh area, crossing the tidal flats, and terminating at the Raritan River (CDM 1999a) near the river-side end of the small embayment at the north side of the marsh. A drafting pond reportedly used historically for non-contact cooling water is located in the east-central portion of the Sites and may contribute flow to this drainage. Flow in the channel is intermittent. The channel is less than 6 in. in depth, 1 to 4 ft in width, and has a silt and/or clay bottom covered in leaf litter. The pH of water in this channel ranges from 6.68 to 6.92.

The ARC/HRDD drainage channel is located along the northeast side of the HRDD. It is visible entering the tidal flats and terminating at the Raritan River (CDM 1999a) at a point approximately halfway to the end of the small embayment at the north side of the marsh. Flow is intermittent and the channel is often dry. The channel is shallow, 2 to 5 ft in width, and has a silt and/or clay bottom. The pH of water in this channel ranges from 4.92 to 7.52.

The Raritan River is the largest surface water feature associated with OU-3. At this location, NJDEP classifies the water of the Raritan as SE1 (i.e., saline estuarine 1). Designated uses of SE1 water are: 1) shellfish harvesting, 2) maintenance, migration, and propagation of the natural and established biota, 3) primary and secondary contact recreation, and 4) any other reasonable uses (N.J.A.C 7:9B). The salinity of the river ranges from five to six parts per thousand (ppt) as measured at the bank of the river adjacent to the marsh (CDM 1999a). The general direction of water flow in the Raritan River is northeast along the marsh. As discussed above, a small embayment is present at the north side of the marsh.

During periods of high water in the Raritan River (e.g., following heavy rainfall), the marsh area may become inundated with river water, as observed just prior to the supplemental field investigation in September 2004. With the exception of these flood conditions, the marsh is not generally inundated with river water, even during high tide. Tidal inundation is limited to the intertidal zone, which consists of a narrow band of salt-tolerant cordgrass (*Spartina alternifolia*) and unvegetated mud flats (i.e., tidal flats) at the edge of the Raritan River.

1.4.3 Soils

The majority of OU-2 surface soils are classified as urban land, which is typical of areas where industrial facilities or other structures (including pavement or slabs) cover more than 80 percent of the surface area. Another characteristic of urban land is the presence of fill material, often used to build up wet soils. Poorly drained soils were also noted along small permanent and intermittent streams at the Sites under nearly level conditions. These soils range in texture from sandy to clayey and are covered by loam alluvium that has been deposited under flood conditions (CDM 1999a).

The ROD (U.S. EPA 2004) distinguished between surface (i.e., above the groundwater table) and subsurface (i.e., below the groundwater table) soils in OU-2 in their recommended alternative. The groundwater table is within one foot of the soil surface in the ADC area and ARC site, as deep as four feet in the SPD area, and approximately seven feet in the HRDD area.

While a soil survey of OU-3 has not been undertaken, CDM (1999a) noted the presence of frequently flooded soils in the marsh along the northwestern property boundary of the Sites. These very poorly drained soils are located in generally level areas in the tidal area along the Raritan River, where they are subject to tidal flooding. They are characterized by a sandy substratum overlain by a surface layer of mucky silt loam. In some areas, this surface layer of mucky soils is as much as 24 in. thick.

1.4.4 Geology and Hydrogeology

From a geological perspective, the Sites including the upland areas and OU-3 are located on top of the Woodbridge Unit, which is a regional aquiclude (i.e., a subsurface rock, soil, or sediment unit that may absorb water slowly but does not yield useful quantities of water) of more than 100 ft in thickness (CDM 1999a). The Woodbridge Unit is underlain by Triassic diabase sill, which is essentially impermeable. The two regional aquifers (Old Bridge and Farrington) are geologically isolated from the Sites.

The Woodbridge Unit consists of gray silt and clay with occasional discontinuous lenses of fine sand and silt in the upper 50 to 60 ft. In the top 30 ft of the Woodbridge Unit, the laterally discontinuous gray fine sand layers range in thickness from 2 to 8 ft and are separated by layers of gray/dark gray laminated silts and clays (CDM 1999a). These layers were visible in soil borings taken during the remedial investigation. The subsurface silt and clay of the Woodbridge Unit have very low permeability and groundwater flow is restricted to the sand lenses, which are discontinuous.

The low hydraulic conductivity and specific capacity of the shallow aquifer, in combination with the hydraulic isolation of site groundwater from the regional supply aquifer were the basis for the justification of technical impracticability in the ROD. Under these conditions in the shallow aquifer, groundwater extraction and treatment would not expedite cleanup of the groundwater and the shallow aquifer could not be used for drinking water because it cannot sustain pumping (CDM 2003).

The conceptual hydrogeologic model of the Sites is that precipitation leaves the Sites by surface runoff toward the Raritan River or infiltrates to unconfined sediments that are overlain on top of the Woodbridge clay (CDM 2003). Where topography permits, this perched groundwater can migrate to the west or northwest and discharge to the surface. Where depressions at the surface of the Woodbridge Unit exist, this perched groundwater could recharge the Woodbridge sand lenses. The majority of surface water at the Sites travels north and west via swales and drainage channels through the marsh toward the Raritan River.

The ROD pointed out that horizontal movement of contaminants in groundwater toward the marsh has occurred but at a very slow rate (i.e., contaminant concentrations in downgradient wells are two to three orders of magnitude less than concentrations at the center of the contaminant plumes) (U.S. EPA 2004). Slow groundwater velocities and the high organic carbon content and geochemistry of the aquifer matrix retard downgradient transport of contaminants from the Sites (CDM 2003). The ROD also cited the screening level ecological risk assessment (SLERA) addendum’s finding of a lack of any significant risks to the environment associated with groundwater discharges to the marsh.

1.5 Ecological Characteristics of OU-3

Information on plant communities and associated habitats, aquatic habitats, threatened, endangered, or special concern species, and wildlife observations from the remedial investigation report (CDM 1999a) and the SLERA addendum (CDM 2002b) is summarized in this section. Additional observations from the 2004 supplemental field investigation are included, where appropriate.

1.5.1 Plant Communities and Associated Habitats

The remedial investigation report classifies the marsh as an EW3 emergent wetland area (CDM 1999a). The dominant vegetation is a dense, nearly pure stand of common reed (*Phragmites communis*) bordered by a nearly pure stand of the more salt-tolerant cordgrass (*Spartina alternifolia*) in the intertidal zone next to the mud flats along the edge of the Raritan River.

Tidal flats border the northern and western edges of the marsh. Figure 1-2 shows the approximate boundary of the marsh, primarily as defined by the presence of *Phragmites,* and the location of the cordgrass. It should be noted that the remedial investigation report defined a much smaller area as the “downstream marsh,” in particular omitting the lobe of marsh that extends upstream along the SPD/ADC drainage.

The eastern edge of the marsh is bordered on the north end by scrub-shrub habitat and in the middle by bare ground associated with the HRDD. South of the HRDD, on the eastern edge of the marsh, the plant community map identifies a forested hillock as FOR1 and a small area further south as FOR3 (Figure 3-26 of CDM [1999a]). FOR1 is defined as upland forest, oak (*Quercus* sp.) is the dominant tree species, and undergrowth is relatively sparse. FOR3 is defined as palustrine broad-leaved deciduous forested wetland; black locust (*Robinia pseudoacacia*) is the dominant tree species. The undergrowth consists of saplings, brambles (*Rubus* sp.), and common reed (*Phragmites communis*) and is relatively heavy. The southern edge of the marsh is bordered by a forested ridge labeled as “offsite forest” on the plant community map (CDM 1999a). This area can be considered upland forest with relatively sparse undergrowth and open condition.

The SLERA addendum considered areas of the Sites other than the marsh to provide more favorable habitat for small mammals than the marsh itself (CDM 2002b). For this reason, and because of the difficulty in attributing the contaminant body burden to the marsh versus the rest of the Sites, the SLERA addendum did not consider the previous small mammal data and did not collect additional small mammal data. Generally, *Phragmites* is considered an invasive species and *Phragmites* marshes provide low-quality nesting and foraging habitat for mammals. The small mammal stations in the 2004 investigation were located in more upland areas that were considered better small mammal habitat than the *Phragmites* marsh.

1.5.2 Aquatic Habitats

The aquatic habitats of OU-3 include the marsh, drainage channels in the marsh, and the intertidal zone of the Raritan River. CDM observed very little surface water in the marsh with the exception of drainage channels that wind through the marsh (CDM 1999a, 2002b). The pH range of marsh surface water is 6.4 to 6.68 (CDM 2002b). As discussed in Section 1.3.2, waters in the marsh are considered fresh water, while waters of the Raritan River adjacent to the marsh are estuarine.

1.5.3 Threatened, Endangered or Special Concern Species

In 1997, the U.S. Fish and Wildlife Service (USFWS) and NJDEP’s Natural Heritage Program were queried regarding the presence of threatened and endangered species and species of concern at or in the vicinity of the Sites. As summarized in the remedial investigation report (CDM 1999a), USFWS responded that no federally listed, proposed threatened, or endangered species under USFWS jurisdiction were known to occur at the Sites, with the exception of an occasional transient bald eagle (*Haliaeetus leucocephalus*) or peregrine falcon (*Falco peregrinus*).

A search of the NJDEP Natural Heritage database revealed no onsite sightings of species of concern (CDM 1999a). Thirteen state-listed threatened, endangered, or rare wildlife species were reported as observed in the vicinity of the Sites. None of these species were observed during site visits.

1.5.4 Wildlife Observations

The remedial investigation report details wildlife observed at the Sites (CDM 1999a); however, with the exception of species clearly in the intertidal zone, these observations were not specific to OU-3. Observed bird species include a variety of perching birds and songbirds that are expected to be migrants or residents of the Sites (given the varied habitats and edge habitat conditions) (CDM 1999a). Terrestrial wildlife observed to use the Sites includes eastern cottontail (*Sylvilagus floridans*), woodchuck (*Marmota monax*), raccoon (*Procyon lotor*), white-tailed deer (*Odocoileus virginanus*), deer mice (*Peromyscus maniculatus*), and unidentified snakes and toads. Other mammals such as fox, skunk, opossum, bats, squirrel, and other rodents are expected to use the Sites (CDM 2002b). No fish were observed in waterways in the upland area or in the marsh.

In the intertidal portion of the marsh and on the mud flats along the Raritan River, fiddler crabs (*Uca minax*) and ribbed mussels (*Modiolus demissus*) were observed (CDM 2002b). Shells of the common oyster (*Crassostrea virginica*) and other mollusks were observed scattered on the mud flats (CDM 2002b). Forage fish collected for the SLERA addendum in 2002 included mummichog (*Fundulus heteroclitus*) and Atlantic silversides (*Menidia menidia*). During the 2004 supplemental field investigation, fiddler crab (*Uca* sp.), white-fingered mud crab (*Rithropanopeus harrisii*), blue crab (*Callinectes sapidus*), and estuarine fishes (*Fundulus* sp.) were caught in baited minnow traps set on the mud flats.

2 Summary of Historical Investigations

The Sites have been the subject of considerable sampling and analysis for environmental contamination since 1991. Most of the historical investigations have focused on the upland portions of the Sites (i.e., the ARC, HRDD, ADC, and SPD properties) and have included only limited sampling of the downstream marsh and the Raritan River adjacent to the Sites (i.e., the area that is now considered OU-3).

Three historical investigations in 1991, 1997–1998, and 1999 included samples from the area now considered OU-3. Data from these investigations are summarized in this section, along with a summary of the conclusions drawn by these investigations regarding contaminant transport and fate, and ecological risks. In addition, a discussion of soil and sediment data from OU-2 (i.e., the upland area of the Horseshoe Road and ARC sites) is included to provide information on potential contaminant sources to the marsh. These investigations are also discussed in the remedial investigation report (CDM 1999a), the feasibility study (CDM 2002a), the SLERA addendum (CDM 2002b), and the ROD (U.S. EPA 2004).

2.1 Background

The most current work on upland soil and sediment was conducted in 1997 and 1998 during the remedial investigation (CDM 1999a). The remedial investigation also included sampling of marsh and river sediment, and marsh and river surface water (CDM 1999a). The objective of the sampling in the marsh and Raritan River was to determine the impact of site contamination on streams and drainage channels and to define the nature and extent of contamination that could be migrating offsite. During CDM's supplemental investigation in 1998, two additional river sediment samples were collected to provide further information on potential site impacts on the Raritan River (CDM 1999a).

The 1999 sampling of marsh and river sediment, which included river surface water and estuarine fishes, was undertaken by CDM to better characterize site-related contamination in the marsh and Raritan River for the SLERA addendum (CDM 2002b). Station locations for the 1997–1999 investigations are shown in Figure 2-1.

The SLERA addendum (CDM 2002b) summarized the work performed by EPA's Environmental Response Team (ERT) in 1991. The ERT collected sediment, water, and fiddler crabs from three stations in the intertidal zone of the Raritan River adjacent to OU-3, according to the SLERA addendum (CDM 2002b). The ERT also collected surface soil, water, and sediment throughout the site, as well as small mammals from the upland area. The objective of this sampling was to document potential offsite migration of contaminants and impact to local biota. Only the fiddler crab data are discussed in this BERA because more extensive and recently collected data are available for marsh and river sediment and water.

2.2 Nature and Extent of Contamination

Upland soil and sediment, marsh sediment, marsh surface water, river sediment, river surface water, and river tissue data are discussed in this section. The 1997–1999 CDM data for these media from the remedial investigation, supplemental investigation, and SLERA addendum are provided in Appendix E of this document. For upland soil, only arsenic, mercury, and PCB concentrations are included in Appendix E; the entire data set is available in the remedial investigation report (CDM 1999a). The historical data set presented in Appendix E includes several data qualifiers that are defined in footnotes to the Appendix E tables. Only data qualified with *R* (i.e., rejected) were not considered for use in data interpretation. Data qualifiers are omitted from text and tables in the main body of this report to avoid confusing the reader.

The discussion of the nature and extent of contamination is generally limited to contaminants that are relevant to this BERA. In particular, the ROD (U.S. EPA 2004) identified arsenic and PCBs as contributors to human health risk at the Sites and this BERA identifies these contaminants and mercury as contributors to ecological risk in OU-3. Because the Sites likely contributed contamination to the marsh (OU-3), the upland soil and sediment discussion focuses on these three contaminants. Their concentration ranges on the various upland properties and drainages are summarized in the table below.

Arsenic, mercury, and PCB concentrations in OU-2 surface soil and sediment

Medium	Arsenic (mg/kg)	Mercury (mg/kg)	PCBs (mg/kg)
Upland Soil (0–12 in.)			
ADC property	6.7–3,640	0.24–20.4	0.031–37
ARC property	5.9–20.0	0.26–33.2	0.024–15
SPD property	1.5–31.5	0.1–23.1	0.046–0.13
HRDD property	19.1–68.4	1.6–1.9	0.61–10.0
Upland Sediment (0–6 in.)			
SPD/ADC drainage	4.2–2,590	0.52–9.6	0.068–25
ADC/ARC/HRDD drainage	23.1–1,110	0.18–8.8	0.36–2.1
ARC/HRDD drainage	4.4–22.6	1.7–5.3	0.076–8

Note: ADC soil stations: SS03, SS04, SS05, SS06, SB04, SB09, SB16, SB17, SB18, SB19, SB26, SB27, SB35, SB36, SB43, and SB49.

ARC soil stations: SS07 through SS10, SB28 through SB31, SB37, SB39, SB44, SB45, and SB46.

SPD soil stations: SB08, SB15, SB23, SB25, SB32, SB33, SB40, SB41, SB42, SB47, and SB48.

HRDD soil stations: SB05, SB12, SB13, SB20, and SB21.

SPD/ADC drainage stations: SD03 through SD08, and SD28.

ADC/ARC/HRDD drainage stations: SD13, SD16, SD17, SD18, SD30, and SD32.

ARC/HRDD drainage stations: SD15, SD20, SD22, and SD23.

Arsenic concentrations were highest on the ADC property and this is reflected in the elevated concentrations in the upland portion of the SPD/ADC drainage, which receives surface runoff from the ADC property. The SPD/ADC drainage is also the site of elevated arsenic (and mercury and PCB concentrations) in the marsh (i.e., OU-3). The concentration ranges for these three contaminants in the marsh drainages and river sediment are summarized in the table below. Note that this table summarizes data from two specific drainage channels in the marsh, not data from the entire marsh.

Arsenic, mercury, and PCB concentrations in OU-3 marsh drainage and river sediment

Medium	Arsenic (mg/kg)	Mercury (mg/kg)	PCBs (mg/kg)
Marsh Sediment (0–6 in.)			
SPD/ADC drainage	600–8,220	7.5–385	0.89–32
ADC/ARC/HRDD drainage	790	7.6	0.24
Marsh Sediment (6–18 in.)			
SPD/ADC drainage	476–1,140	3.1–33.1	0.32–1.9
ADC/ARC/HRDD drainage	166	2.1	ND
Marsh Sediment (18–30 in.)			
SPD/ADC drainage	190–490	2.2–4.9	0.14–0.24
ADC/ARC/HRDD drainage	140	2.0	ND
Marsh Sediment (30–42 in.)			
SPD/ADC drainage	143–485	1.7–2.4	0.087–0.37
ADC/ARC/HRDD drainage	173	1.7	ND
River Sediment			
(0–6 in.)	35.3–2,200	0.95–7	0.045–1.3
(6–18 in.)	14.9–845	0.34–4.7	0.041–1.5
(18–30 in.)	11.2–436	0.15–3.7	0.015–0.22
(30–42 in.)	10.7–278	0.1–3.1	0.051–0.22

Note: ND - not detected

SPD/ADC drainage stations: SDM01 through SDM04, SD09 through SD12, and SD35

ADC/ARC/HRDD drainage stations: SDM05 and SDM12 (field duplicates), average is reported

ARC/HRDD drainage stations: none

Arsenic, mercury, and PCB concentrations were higher in the SPD/ADC drainage than in the ADC/ARC/HRDD drainage or the river. In both marsh and river sediment, concentrations decreased with depth. In addition to arsenic, mercury, and PCBs, data on other contaminants are summarized in the marsh and river discussions below, to provide a means of comparing the historical OU-3 data with the 2004 supplemental investigation data presented in Section 3.

2.2.1 Upland (OU-2) Soil

During the 1997 remedial investigation, CDM collected soil samples from the SPD, HRDD, ADC, and ARC properties. Figure 2-1 shows surface soil and soil boring sample locations in these upland areas. The surface interval was 0–12 in. depth. The soil data are discussed extensively in the remedial investigation report (CDM 1999a). The discussion below is limited to arsenic and polychlorinated biphenyls (PCBs), which were identified as contributors to human health risk in the OU-2 ROD (U.S. EPA 2004), and mercury, which is identified as a risk contributor in this BERA. It should be noted that at the time of the remedial investigation in 1997, considerable excavation and removal of contaminated material and debris had already occurred (U.S. EPA 2004).

2.2.1.1 Metals

Arsenic and mercury concentrations in upland surface soil are shown in Figures 2-2a and 2-3a. The highest and second highest arsenic concentrations (3,640 and 1,090 mg/kg) were found on the ADC property. Indeed, all soil samples with arsenic concentrations greater than 50 mg/kg were found on the ADC property, with the exception of one HRDD sample with an arsenic concentration of 68.4 mg/kg. All surface soil samples on the ARC property had arsenic concentrations of 20 mg/kg or less. For mercury, the two highest concentrations (33.2 and 26 mg/kg) were located on the ARC property. The next highest concentration (23.1 mg/kg) was observed at the ADC edge of the SPD property followed by three concentrations greater than 10 mg/kg (20.4, 18.1, and 13.1 mg/kg) on the ADC property. The highest concentrations for arsenic and mercury in soil on the SPD property were found at Stations SB08 and SB42, which are located on the periphery of the site. If these stations are excluded, the maximum concentrations for arsenic and mercury on the SPD property are 15.8 and 0.89 mg/kg, respectively.

2.2.1.2 PCBs

PCB concentrations in upland surface soil are shown in Figure 2-4a. The highest PCB concentrations (27, 29, and 20 mg/kg) were found at on the ADC property. The next highest concentration (15 mg/kg) was on ARC property followed by a concentration of 10 mg/kg on both the ARC and HRDD properties.

2.2.2 Upland (OU-2) Sediment

During the remedial investigation in 1997, CDM collected surface sediment samples from the 0–6 in. interval in various streams, drainage channels, and marshy areas in the upland portion of the Horseshoe Road and ARC sites (CDM 1999a). The sediment station locations are shown on Figure 2-1 and are noted as “SD” samples. Samples were analyzed for metals, pesticides/PCBs, semivolatile organic compounds (SVOCs), and volatile organic compounds (VOCs). As with the soil samples, the upland sediment data are discussed extensively in the remedial investigation report (CDM 1999a). Only arsenic, mercury, and PCBs data are discussed here.

2.2.2.1 Metals

Arsenic and mercury concentrations in upland surface sediment are shown in Figures 2-2a and 2-3a, respectively. The two highest arsenic concentrations (2,590 and 775 mg/kg) were found in the SPD/ADC drainage. At other upland sediment stations, arsenic concentrations were less than 25 mg/kg, with the exception of a value of 1,110 mg/kg at Station SD32 adjacent to the ARC/ADC/HRDD drainage near the marsh edge of the HRDD. Like arsenic, the highest mercury concentration (9.6 mg/kg) was found in the SPD/ADC drainage. Concentrations ranged from 0.18 to 8.8 mg/kg in the ADC/ARC/HRDD drainage with the highest concentration observed at Station SD32. Concentrations were generally lower in the ARC/HRDD drainage (1.7 to 5.3 mg/kg).

2.2.2.2 PCBs

PCB concentrations in upland surface sediment are shown in Figure 2-4a. The highest concentration in sediment (58 mg/kg, the average of two field duplicates at Station SD20) appears in the ARC/HRDD drainage. The two downstream sediment samples in this drainage were much lower (i.e., 2.1 mg/kg and undetected at 0.076 mg/kg detection limit in the most downstream station). The two next highest concentrations were in the SPD/ADC drainage (25 and 12 mg/kg). Elevated detection limits were noted in some of the upland sediment samples.

2.2.3 Marsh Sediment

During the remedial investigation in 1997, CDM collected three sediment samples (SD26, SD33, and SD35) in what was defined as the downstream marsh. Based on the marsh boundary as defined by *Phragmites* and shown in Figure 1-2, two additional samples (SD36 and SD37) collected in 1997 are in the northeast area of the marsh and four samples (SD09 through SD12) collected in 1997 along the SPD/ADC drainage are also located in the marsh. The 1997 sediment samples consisted of the 0–6 in. interval and were analyzed for metals, pesticides/PCBs, SVOCs, and VOCs.

In 1999, sediment samples from eleven stations (SDM01 through SDM11) were collected in the marsh, including some along the SPD/ADC drainage and others in the central portion of the marsh. These samples included 0–6, 6–18, 18–30, and 30–42 in. intervals, and were analyzed for metals, pesticides/ PCBs, SVOCs, and VOCs. The surface interval data from both investigations are discussed here. In addition, the arsenic, mercury, and PCB data from deeper intervals are discussed. No reference stations were identified for either the 1997 or the 1999 investigation.

Station locations are depicted in Figure 2-1. A statistical summary of select analytes from the 1997–1999 marsh surface sediment data is presented in Table 2-1. This summary does not include data from Stations SD32 and SD34, which are shown in the figures but are not in the marsh. All data are provided in Appendix E of this report.

2.2.3.1 Metals

Arsenic concentrations in marsh surface sediment are shown in Figure 2-2a. The highest concentration (8,220 mg/kg) was observed in the SPD/ADC drainage. Other stations in or adjacent to this drainage also had elevated arsenic concentrations (range of 1,380 to 4,830 mg/kg). One other marsh station (SDM06) located northwest of the HRDD had arsenic concentration exceeding 1,000 mg/kg (6,610 mg/kg). This pattern of contamination was similar in the subsurface intervals depicted in Figures 2-2b, 2-2c, and 2-2d for the 6–18, 18–30, and 30–42 in. intervals, respectively. In each of these subsurface intervals, the highest concentrations of arsenic (1,140, 490, and 485 mg/kg, respectively) were observed in the SPD/ADC drainage. Concentrations were lowest in the HRDD/ARC drainage and stations at the north end of the marsh.

Chromium concentrations ranged from 19.9 to 4,950 mg/kg at site stations. Copper concentrations ranged from 19.6 to 4,040 mg/kg at site stations. For both chromium and copper, the highest concentrations in the marsh were at Station SDM06, which also had an elevated arsenic concentration (6,610 mg/kg).

Mercury concentrations in marsh surface sediment are shown in Figure 2-3a. The highest concentration (385 mg/kg) was observed at Station SDM01 in the SPD/ADC drainage where an elevated arsenic concentration (3,540 mg/kg) was observed. Concentrations greater than 100 mg/kg were observed at two additional stations in the SPD/ADC drainage (SDM01 and SDM03 with mercury concentrations of 133 and 184 mg/kg, respectively). Concentrations closer to the river were generally less than 10 mg/kg.

A similar pattern of contamination was observed for the subsurface intervals depicted in Figures 2-3b, 2-3c, and 2-3d for the 6–18, 18–30, and 30–42 in. intervals, respectively. In each of these intervals, the highest concentrations were observed in the SPD/ADC drainage. Concentrations decreased with depth from a high of 33.1 mg/kg in the 6–18 in. interval to a high of 2.4 mg/kg in the 30–42 in. interval.

2.2.3.2 Pesticides/PCBs

γ-Chlordane was detected at one station in marsh surface sediment with a concentration of 2.8 µg/kg. 4,4′-DDT was detected in four of 17 samples, with a concentration range of 5.8 to 54 µg/kg. The highest concentration of 4,4′-DDT was observed at Station SD37, which is located near the ARC drainage and several other small drainages from the east.

The concentrations of total PCBs in marsh surface sediment are shown in Figure 2-4a. The highest concentration was observed in the SPD/ADC drainage where the highest mercury concentration and an elevated arsenic concentration were also observed. Other stations in this drainage also had relatively high PCB concentrations (13, 20, and 27 mg/kg). PCB concentrations were less than 1 mg/kg in the rest of the marsh. High detection limits were noted for some of the 1997 marsh sediment stations (e.g., 23 mg/kg at Station SD11).

PCB concentrations from the 6–18 in. interval are shown in Figure 2-4b. Concentrations were much lower than in the surface interval, with a maximum of 1.9 mg/kg observed in the

SPD/APC drainage. PCBs were rarely detected in the 18–30 and 30–42 in. intervals, and therefore were not illustrated.

2.2.3.3 Polychlorinated Dibenzo-*p*-Dioxins and Polychlorinated Dibenzofurans

Polychlorinated dibenzo-*p*-dioxins and polychlorinated dibenzofurans (PCDD/Fs) were analyzed in a subset of upland sediment samples in 1997. One location, Station SD09, is located in the SPD/ADC drainage and is now considered part of the marsh. For the discussion here, PCDD/F results were converted to toxicity equivalents (TEQs) using toxicity equivalence factors (TEF) established for humans/mammals and birds by the World Health Organization (WHO) (Van den Berg et al. 1998). The details of this calculation are described later in this document in Section 3.3.5.

The human/mammalian and avian TEQs for Station SD09 were 136 and 151 ng/kg, respectively. These values are lower than those calculated for Station SD07, located upstream of SD09 in the SPD/ADC drainage (outside of the marsh). The human/mammalian and avian TEQs for Station SD07 were 226 and 246 ng/kg, respectively.

2.2.3.4 SVOCs

Total polycyclic aromatic hydrocarbons (PAHs) were detected in 15 of 17 marsh surface sediment samples, with concentrations ranging from 2,300 to 16,000 μg/kg. The highest concentration was observed at Station SDM09, which is located in the western third of the marsh.

2.2.3.5 VOCs

Trichloroethene (TCE) was detected at two stations, Stations SDM05 and SDM11, at concentrations of 4 and 6 μg/kg, respectively. 1,2,4-Trichlorobenzene was detected in 10 of 20 samples, with concentrations ranging from 4 to 1,500 μg/kg. The highest concentration (an average of field duplicates) was observed at Station SD37, which is located near the ARC drainage and several other small drainages from the east. Station SD36, which is also located in this area, had a 1,2,4-trichlorobenzene concentration of 400 μg/kg.

2.2.4 Marsh Surface Water

In 1997, duplicate unfiltered surface water samples from one station (SW26, which is coincident with sediment sampling station SD26) were collected in what was termed the downstream marsh during the remedial investigation for the Horseshoe Road Site (CDM 1999a). The surface water samples were analyzed for metals, pesticides/PCBs, SVOCs, VOCs, TDS, alkalinity, and hardness.

Arsenic, chromium, copper and mercury were observed at the following average concentrations at the marsh station: 552, 19.6, 119, and 0.86 μg/L, respectively. γ-Chlordane, 4,4′-DDT, and PCBs were undetected in surface water at the marsh station.

With one exception (bis[2-ethylhexyl]phthalate at 1 μg/L in one of the duplicate samples), SVOCs were undetected at the marsh surface water station with a standard detection limit of 10 μg/L (occasionally 25μg/L). VOCs were undetected at the marsh surface water station with a standard detection limit of 10 μg/L.

2.2.5 Tissue of Marsh Biota

No biological tissue was collected from the marsh in 1997 and 1999.

2.2.6 River Sediment

During the remedial investigation, CDM collected surface (0–6 in. interval) sediment from four stations in the Raritan River (SD24, SD25, SD27, and SD31) in 1997 and two additional stations (SD38 and SD39) in 1998. In 1999, 20 stations in the Raritan River were sampled (RSD01 through RSD20), including two upstream reference stations (RSD01 and RSD02) located approximately 500 ft upstream from the site and two downstream reference stations (RSD18 and RSD19) located approximately 3,000 ft downstream from the site. The 1999 samples included 0–6, 6–18, 18–30, and 30–42 in. intervals. The surface interval data are discussed here, although all data are provided in Appendix E of this report. In addition, the arsenic, mercury, and PCB data from deeper intervals are discussed. Samples were analyzed for metals, pesticides/PCBs, SVOCs, and VOCs. PCDD/Fs were analyzed in a subset of samples in 1999 (four site stations [RSD07/21, RSD15, RSD17, RSD23] and one reference station [RSD19]). A statistical summary of select analytes from the 1997–1999 river sediment data is presented in Table 2-2.

In addition to chemical analysis, sediment from four site stations (RSD04, RSD07, RSD13, and RSD15) and one reference station (RSD02) underwent sediment toxicity testing in 1999. The results are summarized below.

2.2.6.1 Metals

Arsenic concentrations in river surface (0–6 in. interval) sediment are shown in Figure 2-2a. The highest concentration (2,200 mg/kg) was observed where the SPD/ADC drainage enters the river.

Arsenic concentrations from the 6–18, 18–30, and 30–42 in. intervals are shown in Figures 2-2b, 2-2c, and 2-2d. In all subsurface intervals, the highest concentration was observed offshore of where the SPD/ADC drainage enters the Raritan River. In addition, arsenic concentrations at depth exceeded 100 mg/kg at stations spanning the area from just upstream to just downstream of the SPD/ADC drainage mouth.

Chromium concentrations in river surface sediment ranged from 60.2 to 2,340 mg/kg at site stations. Copper concentrations ranged from 182 to 3,560 mg/kg at site stations. For both chromium and copper, the highest concentrations were located at Station SD27, which is located on the riverbank.

Mercury concentrations in river surface sediment are shown in Figure 2-3a. The highest concentration in surface sediment (7.0 mg/kg) was observed on the riverbank where the SPD/APC drainage enters the river. The second highest mercury concentration (6.0 mg/kg) was observed further downstream on the riverbank. Mercury concentrations at stations further from the edge of the marsh were less than 3.5 mg/kg.

Mercury concentrations from the 6–18, 18–30, and 30–42 in. intervals are shown in Figures 2-3b, 2-3c, and 2-3d. Maximum concentrations in these intervals were 4.7, 3.7, and 3.1 mg/kg, respectively.

2.2.6.2 Pesticides/PCBs

γ-Chlordane was detected in 10 of 22 samples, with the highest concentration (36 μg/kg) observed on the riverbank where the SPD/APC drainage enters the river. This location is also where the highest mercury concentration in surface sediment was observed. 4,4′-DDT was detected in three of 21 samples, with the highest concentration (22 μg/kg) observed approximately 150 ft offshore of the marsh, slightly downstream of where the SPD/ADC drainage enters the river.

Concentrations of total PCBs in river surface sediment and the 6–18 in. sediment interval are shown in Figures 2-4a and 2-4b, respectively. In both intervals, only two stations exceeded 1 mg/kg, with maximum concentrations of 1.3 and 1.5 in the surface and 6–18 in. interval, respectively. PCBs were either rarely detected or detected at low concentrations in the 18–30 and 30–42 in. intervals and therefore were not illustrated.

2.2.6.3 PCDD/Fs

For the discussion here, PCDD/F results were converted to TEQs using TEFs established for humans/mammals and birds by WHO (Van den Berg et al. 1998). The details of this calculation are described later in this document in Section 3.3.5. The calculated TEQ values for river sediment are shown in Table 2-3.

Human/mammalian TEQ values ranged from 36.3 to 109 ng/kg at the four site stations where PCDD/Fs were analyzed while the reference Station RSD19 had a human/mammalian TEQ value of 4.38 ng/kg. Avian TEQ values ranged from 59.5 to 176 ng/kg at the four site stations where PCDD/Fs were analyzed. The avian TEQ value at the reference station was 6.48 ng/kg. The highest human/mammalian and avian TEQ values were observed at Station RSD07. The next highest values (60.7 and 94.4 ng/kg for human/mammalian and avian, respectively) were found at Station RSD15 located just downstream of the small embayment.

2.2.6.4 SVOCs

Total PAHs were detected in all river surface sediment samples, with concentrations ranging from 4,700 to 29,000 μg/kg. The highest concentration was observed at Station SD39 collected in 1998.

2.2.6.5 VOCs

VOCs were generally undetected in river surface sediment samples. If detected, concentrations were generally at or below the standard detection limit. TCE was undetected at all stations and 1,2,4-trichlorobenzene was detected only at one station offshore of the small embayment with a concentration of 2.0 μg/kg.

2.2.6.6 Sediment Toxicity Tests

The sediment toxicity test was the 28-day chronic bioassay for the saltwater test species *Leptocheirus plumulosus* (an amphipod). With one exception, amphipod mortalities in sediment samples from site stations were statistically similar to that of the reference station. At RSD07, the survival rate was statistically lower than that of the reference station. RSD07 is located offshore of where the SPD/ADC drainage enters the Raritan River. Growth and reproduction, the two subchronic endpoints, were also lowest at this station, although no statistical analyses were performed (CDM 2002b).

2.2.7 River Surface Water

In 1997, three unfiltered surface water samples were collected from the bank of the Raritan River at locations where sediment was also sampled. Samples were analyzed for metals, pesticides/PCBs, SVOCs, VOCs, TDS, alkalinity, and hardness. The following information was also recorded for surface water sampling locations: pH, specific conductance, turbidity, salinity, DOC, depth of water, flow rate, and other observable physical characteristics.

The 1999 investigation sampled 15 surface water stations in the Raritan River adjacent to the site (i.e., the same locations as sediment stations RSD03 through RSD17) and four reference stations. Unfiltered surface water samples were analyzed for metals, pesticides/PCBs, SVOCs, VOCs, alkalinity, hardness, and TDS. Dissolved oxygen, pH, temperature, salinity, turbidity, and specific conductance were measured *in situ* at each surface water sampling location.

2.2.7.1 Metals

Arsenic was detected in most samples in 1999, with concentrations ranging from 2.2 to 5.2 μg/L in 1999. Arsenic was detected at three of the four reference stations in 1999 at concentrations of 2.4, 2.5, and 2.5 μg/L. In 1997, arsenic was detected at concentrations of 5.9, 20.3, and 6.5 μg/L for Stations SW24, SW25, and SW27, respectively.

Chromium was detected in only two samples in 1999 (0.8 and 2.4 μg/L at Stations RSW11 and RSW15, respectively). Chromium was undetected at the reference stations in 1999. In 1997, chromium was detected at concentrations of 2.0, 41.8, and 4.2 μg/L for Stations SW24, SW25, and SW27, respectively.

Copper was detected at all stations in 1999 with concentrations ranging from 5.4 to 22.8 μg/L and at the reference stations with concentrations ranging from 4.6 to 7.6 μg/L. In 1997, copper was detected at concentrations of 107, 249, and 140 μg/L for Stations SW24, SW25, and SW27, respectively.

Mercury was undetected at all stations in 1999 at a detection limit of 0.10 μg/L. In 1997, mercury was detected at concentrations of 0.45, 0.86, and 0.86 μg/L for Stations SW24, SW25, and SW27, respectively.

2.2.7.2 Pesticides/PCBs

With two exceptions, pesticides/PCBs were detected only at reference Station RSW02. The two exceptions were β-hexachlorocyclohexane at 0.009 μg/L, at Station SW27 in 1997, and γ-hexachlorocyclohexane at 0.06 μg/L, at Station RSW13 in 1999.

All of the pesticides were detected at reference Station RSW02 at concentrations slightly above their respective detection limits. In addition, PCBs were detected at this station at a concentration of 8.8 μg/L.

2.2.7.3 SVOCs

With two exceptions, SVOCs were undetected in surface water samples from the Raritan River. The exceptions were bis(2-ethylhexyl)phthalate at Station SW27 from 1997 (2.0 μg/L), and RSW13 from 1999 (3.0 μg/L), and di-*n*-butylphthalate at Station RSW24 from 1999 (1.0 μg/L). These detected concentrations were below the standard detection limit of 10 μg/L.

2.2.7.4 VOCs

VOCs were generally undetected in surface water samples from the Raritan River and, if detected, reported concentrations were below the standard detection limit of 10 μg/L. Station RSW17, coincident with sediment Station RSD17 in 1999, had the only observations of chlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, *cis*-1,2-dichloroethene, and vinyl chloride. This station was located on the far side of the small embayment at the north end of the marsh.

2.2.8 Tissue of River Biota

The historical investigations included sampling of fiddler crabs in 1991 and forage fish in 1999. The 1999 investigation also included 12 blue claw crab samples from various sediment sample locations in the Raritan River, to assess potential human health risks related to crab consumption. These crab samples were not intended for use in the ecological risk assessment (ERA). Hepatopancreas and muscle tissue samples were submitted to the laboratory for analysis of metals, pesticides/PCBs, SVOCs, and VOCs. Contaminant levels in these crab samples were found to be lower than those on which the 1999 New Jersey health advisory for the Raritan River was based (Osolin 2006, pers. comm.). The blue claw crab data are not included in this BERA.

2.2.8.1 Fiddler Crabs

In 1991, EPA's ERT collected fiddler crabs from three stations in the intertidal zone of the Raritan River adjacent to OU-3. The 1991 fiddler crab data are presented in Table 2-4; however the measurement basis (wet or dry) is not known. Sample location FC1 was considered upstream of the site while FC2 and FC3 were adjacent to the site. As noted in the ERT report and described in the SLERA addendum, the pesticide degradation products DDE and DDD as well as PCB Aroclors® 1248 and 1254 were fairly ubiquitous in distribution. The metals concentrations were variable with concentrations of some metals (e.g., arsenic, chromium, iron, lead) lowest at FC1 and other metals highest at FC1 (e.g., potassium, selenium, sodium, zinc).

2.2.8.2 Forage Fish

The 1999 investigation included whole body composite forage fish tissue samples from nine of the Raritan River sediment sample locations, including the downstream reference Station RF19. In addition, a composite of fish from four sample locations (RSD04, RSD11, RSD13, and RSD14) was submitted for analysis. Forage fish samples were analyzed for metals, pesticides/PCBs, SVOCs, VOCs, and percent lipids. The forage fish data from 1999 are included in Appendix E. Data are reported on a wet weight (ww) basis.

Metals—Arsenic concentrations ranged from 0.42 to 0.77 mg/kg (ww). The station composite sample also contained arsenic at a concentration of 0.77 mg/kg (ww) and the sample from the reference station contained arsenic at a concentration of 0.40 mg/kg (ww).

Chromium concentrations in fish tissue ranged from 0.17 to 0.40 mg/kg (ww). The station composite sample had a higher concentration (0.93 mg/kg [ww]). The chromium concentration in the reference sample was 0.27 mg/kg (ww).

The copper data were rejected (i.e., were unusable) in four of the samples, including the station composite sample. In the remaining samples, concentrations ranged from 0.97 to 4.2 mg/kg (ww). The copper concentration in the reference sample was 0.52 mg/kg (ww).

Mercury was undetected in all but the sample from RSD04 where a concentration of 0.40 mg/kg (ww) was observed.

Pesticides/PCBs—Most pesticides were undetected in the forage fish samples. When detected, pesticide concentrations tended to be higher at the reference station than at the site stations. For example, 4,4′-DDD and 4,4′-DDE concentrations were 110 and 120 μg/kg (ww) at the reference station and ranged from 35 to 60 μg/kg (ww) and 38 to 66 μg/kg (ww), respectively, at the site stations.

Dieldrin was detected in two samples (i.e., 9.7 μg/kg (ww) at the reference station and 12 μg/kg (ww) in the station composite sample) and was undetected at 5 μg/kg (ww) in all other samples. Heptachlor epoxide was detected at 21 μg/kg (ww) at the reference station and ranged from 14 to 18 μg/kg (ww) in all other samples.

With the exception of Aroclor® 1260, all Aroclor® data were undetected at 100 μg/kg (ww). Aroclor® 1260 (and, thus, total PCBs) was estimated in all samples except RF15 with a range of 190 to 300 μg/kg (ww). Aroclor® 1260 and total PCBs were undetected at the reference station at an elevated detection limit of 400 μg/kg (ww). The station composite contained Aroclor® 1260 and total PCBs at a concentration of 270 μg/kg (ww).

SVOCs—With one exception, SVOCs were undetected in the 1999 forage fish samples at elevated detection limits ranging from 1,600 to 20,000 μg/kg (ww). Di-*n*-butyl phthalate was reported as estimated in two samples adjacent to the site at a concentration of 740 μg/kg (ww). The total PAH data were rejected.

VOCs—VOCs were generally undetected at a detection limit of 10 μg/kg (ww). Exceptions were detections of xylene (reference station only), methylene chloride, acetone, carbon disulfide, and 2-butanone.

2.3 Transport and Fate of Contaminants

The primary transport pathway from OU-2 to OU-3 identified in the remedial investigation report (CDM 1999a) and the ROD for OU-2 (U.S. EPA 2004) is surface runoff that flows through drainage channels into the marsh, and ultimately to the Raritan River. As discussed in the remedial investigation report, some contaminants in surface water runoff adsorb to suspended sediment in the water and then accumulate where sediments are deposited or are transported when sediment becomes resuspended. Adsorption was identified as a major transport process for inorganic analytes, pesticides/PCBs, and PAHs. Many of the inorganic analytes, pesticides/PCBs, and PAHs found at the Sites were considered to be persistent because of low solubilities or very slow biodegradation rates. Concentrations in soils and sediments at the Sites were predicted to remain stable or decrease slowly over time, in part because of adsorption to particles in surface runoff that flows through drainage channels and swales to the river (CDM 1999a).

The importance of surface runoff and the persistence of contaminants are evidenced by the elevated concentrations of contaminants, particularly arsenic, mercury, and PCBs, in the SPD/ADC drainage sediments. Concentrations remained high in the SPD/ADC drainage for quite a distance into the marsh. The SPD/ADC drainage experiences year-round (perennial) flow and channels surface runoff from the SPD and ADC properties through the marsh to the Raritan River. Elevated concentrations of these contaminants were prevalent on the ADC property, suggesting that this property is a primary source of contamination from the upland areas to the marsh through the SPD/ADC drainage.

In contrast, the ARC/HRDD drainage had relatively low concentrations of arsenic, mercury, and PCBs. Arsenic concentrations in ARC property soil and sediment were less than 25 mg/kg. Although a few isolated occurrences of elevated mercury and PCB concentrations were observed in ARC soil and sediment, downstream sediment concentrations in the ARC/HRDD drainage and the marsh were low, suggesting little, if any, transport of these contaminants to the marsh from the ARC property. The intermittent nature of water flow in the ARC/HRDD drainage as compared to the perennial flow in the SPD/ADC drainage, as well as differing initial amounts of contaminants on the upland properties, may help to explain the difference between the two drainages in apparent transport of mercury and PCBs into the marsh.

Attenuation of contaminant concentrations is observed as the SPD/ADC drainage approaches the river. Arsenic, mercury, and PCB concentrations were generally much lower in river surface sediment than in the surface sediment of the SPD/ADC drainage. However, the highest concentrations of these contaminants in river sediment were generally observed near where the SPD/ADC drainage enters the river.

The remedial investigation report (CDM 1999a) also identified groundwater transport as a potential pathway for inorganic and VOC contamination to move from upland areas to the marsh and river. However, the 2003 amendment to the feasibility study (CDM 2003) provided further clarification of the potential for contaminant transport in groundwater. Slow groundwater velocities and the high organic carbon content and geochemistry of the aquifer matrix were considered to retard downgradient transport of contaminants from the Sites (CDM 2003). In addition, the ROD pointed out that horizontal movement of contaminants in groundwater toward the marsh has occurred but at a very slow rate (i.e., contaminant concentrations in downgradient wells are two to three orders of magnitude less than concentrations at the center of the contaminant plumes) (U.S. EPA 2004).

These observations supported the justification for the technical impracticability of groundwater remediation (i.e., because of the low hydraulic conductivity and specific capacity of the shallow aquifer, groundwater extraction and treatment would not expedite cleanup of the groundwater) (CDM 2003). In addition, the low hydraulic conductivity and specific capacity of the shallow aquifer would preclude use of the aquifer for drinking water (i.e., it cannot sustain pumping) and the Sites are hydraulically isolated from the regional groundwater supply aquifers. Future impacts to wetland areas were considered unlikely, and routine monitoring would provide sufficient warning of contaminant migration to the wetland areas.

2.4 Summary of Ecological Risks

The SLERA addendum concluded that exposure to contaminants in sediment and water in the marsh and Raritan River posed potential risk to ecological receptors (CDM 2002b). The primary contributors of risk were inorganic contaminants. The addendum did not find any significant risks to the environment associated with groundwater discharges to the marsh. Although the SLERA addendum identified risk to herring gull from exposure to PCDD/Fs in Raritan River sediment, subsequent analysis of the risk calculations as presented in the OU-3 work plan (Exponent 2004) found that the original calculations were in error and the hazard index for exposure of herring gulls to PCDD/Fs in river sediment was less than one.

The SLERA addendum summarized the potential ecological risks and contaminant contributors as follows (note that risk to herring gull has been corrected to show none):

	Maximum Concentration Exposure		Mean Concentration Exposure	
Receptor Species	Marsh	Raritan River	Marsh	Raritan River
Short-tailed shrew	Potential exists (arsenic and iron)	NA	Potential exists (arsenic and iron)	NA
Red-tailed hawk	Potential exists (chromium)	NA	Potential exists (chromium)	NA
Marsh wren	Potential exists (chromium)	NA	Potential exists (chromium)	NA
Osprey	NA	Potential exists (chromium and zinc)	NA	Potential exists (chromium)
Herring gull	NA	None	NA	None
Fish	NA	Potential exists (copper)	NA	Potential exists (copper)

Note: This table is modified from Table 5-5 of the SLERA addendum (CDM 2002b). NA and "None" notations did not appear in the original table. NA signifies "not applicable."

The SLERA addendum (CDM 2002b) concluded that adverse effects on benthic organisms from contaminated Raritan River sediment are localized to the area immediately adjacent to the site where the main drainage channel for the marsh (i.e., the SPD/APC drainage) enters the river. This area of the river also tended to have the highest contaminant concentrations in sediment.

Finally, the SLERA addendum noted that the Raritan River has numerous potential sources of contamination and that there is some uncertainty in assuming that all the contaminants found in fish tissue originated exclusively from the site (CDM 2002b). Similarly, the 1991 ERT discussion of the fiddler crab data noted that PCB Aroclors® 1248 and 1254 were found in all samples, suggesting system-wide contamination in the river from other sources as well as the immediate area.

Following review of the SLERA addendum, EPA determined that additional sampling and a BERA were necessary to refine the understanding of potential ecological risk for OU-3 and to provide a decision-making tool for remedy selection. Therefore, a supplemental investigation was conducted in 2004 to provide data for a BERA. The results of the 2004 investigation and the BERA are discussed in the remainder of this report.

3 Results of the Supplemental Field Investigation

3.1 Objectives of the Investigation

The overall objective of the 2004 supplemental field investigation was to characterize the area of OU-3 to support the BERA and feasibility study. The investigation included collection of surface sediment and biota from the marsh and Raritan River for chemical analysis and testing. The objectives of the surface sediment sampling were: 1) to assess the chemical concentrations, sediment toxicity potential, and contaminant bioaccumulation potential in marsh sediment, 2) to supplement existing data on contaminant concentrations in the Raritan River, and 3) to supplement existing data on PCDD/F concentrations in marsh and intertidal river sediment.

The objectives of the biota sampling were to provide site-specific data on contaminant concentrations in 1) crabs for use in the herring gull exposure model, 2) common reed (*Phragmites* sp.) for use in the muskrat exposure model, 3) terrestrial invertebrates for use in the marsh wren and short-tailed shrew exposure models, and 4) small mammals for use in the red-tailed hawk exposure model. In addition, contaminant concentration data in blackworms (*Lumbriculus variegatus*) and earthworms (*Eisenia fetida*) from the bioaccumulation testing of site sediment were collected for use in the marsh wren and short-tailed shrew exposure models.

3.2 Methods for Sampling, Analysis, and Testing

Sample locations for the 2004 supplemental field investigation are shown on Figure 3-1. Marsh sediment locations were generally selected to cover areas in drainage channels that were not previously sampled. All but four of the site marsh stations (i.e., Stations 13A, 14, 14A, and 22) were located in visible drainage channels. Raritan River sediment locations were selected to cover areas not previously sampled. Small mammal stations in the marsh were located in more upland areas that were considered suitable habitat for small mammals. Marsh insects were collected from pitfall traps and from nearby bushes at Stations 11A, 13A, 14A, 18A, and 22, and composited into a single site insect sample. Insects from pitfall traps and bushes near Station TERRREF1 were composited for a single reference insect sample.

Marsh reference locations at the southern end of the site were determined during a site visit with approval of NJDEP, USFWS, and EPA representatives. The reference locations were considered to be removed from influence of site contamination by virtue of their location on the far side of a hillock from the upland area of the Sites, as well as the marsh. As noted previously, water from the upland sites flows north and northwest to the river. The marsh reference locations were not located in drainage channels.

The river reference locations were generally discussed during the site visit and were located during the field investigation with approval from EPA representatives. The upstream river reference locations were sited approximately 500, 1,000, and 1,500 ft upstream of the most upstream sediment sample. Location AQUAREF2, at 1,000 ft upstream of the site, was at the approximate location of the 1999 river reference stations RSD01 and RSD02. The downstream river reference locations were sited approximately 625 and 1,125 ft downstream from the downstream corner of the small embayment at the northern edge of the site. For comparison, the 1999 river reference stations were located approximately 3,000 ft downstream of the site.

Exponent collected environmental samples in accordance with the EPA-approved rationale, procedures, and protocols provided in the field sampling plan and quality assurance project plan (Exponent 2004). Samples for routine analytical services target compound list (TCL) organic compounds, and target analyte list (TAL) metals (and cyanide) were analyzed through the EPA Contract Laboratory Program to meet quality assurance data requirements. Chemical analytical results were submitted to EPA in March 2005 (Henry 2005, pers. comm.).

The following parameters were analyzed during this investigation:

- **Marsh Sediment—**TCL SVOCs and VOCs, pesticides/PCBs, TAL metals, PCDD/Fs at select locations, total organic carbon (TOC), pH, acid-volatile sulfide/simultaneously extracted metals, grain size, and percent moisture

- **Marsh Plant (Common Reed) Tissue—**TCL SVOCs, pesticides/PCBs, TAL metals, and percent moisture

- **Marsh Insect Tissue—**TCL SVOCs, pesticides/PCBs, TAL metals, and percent lipids

- **Small Mammal Tissue—**TCL SVOCs, pesticides/PCBs, TAL metals, percent moisture, and percent lipids

- **Earthworm and Blackworm Tissue from the Bioaccumulation Testing Laboratory—**TCL SVOCs, pesticides/PCBs, TAL metals, percent moisture, and percent lipids

- **River Sediment—**TCL SVOCs, VOCs, pesticides/PCBs, TAL metals, PCDD/Fs at select locations, TOC, pH, grain size, and percent moisture

- **River Crab Tissue—**TCL SVOCs, pesticides/PCBs, TAL metals, PCDD/Fs in selected samples, and percent lipids

- **Estuarine Fish Tissue—**TCL SVOCs, pesticides/PCBs, TAL metals, PCDD/Fs in selected samples, percent moisture, and percent lipids.

In addition to chemical analysis, marsh sediment underwent sediment toxicity and bioaccumulation testing. PCDD/Fs were analyzed only in a subset of marsh and river sediment, crab, and estuarine fish samples. The main objective of the PCDD/F analysis was to ascertain the potential extent of contamination in marsh sediment as well as river sediment and biota downstream of the ARC property. As stated in the work plan (Exponent 2004), results of previous investigations at the Sites indicated no apparent potential risk related to PCDD/F concentrations at the Sites or in the Raritan River, and no evidence of the Sites being a source of PCDD/Fs to river sediment adjacent to the Sites.

Table 3-1 summarizes the sampling and analyses conducted for the supplemental field investigation. Estuarine fishes were added to the sampling program as a surrogate for crabs when sampling failed to yield sufficient crab tissue for full analysis at all stations. For tissue samples with insufficient mass for full analysis (i.e., some crab, earthworm, blackworm, and insect samples), analytes were prioritized as follows: metals, pesticides/PCBs, PCDD/Fs (if at a PCDD/F location), and SVOCs, with approval from EPA. Table B1-1 in Appendix B summarizes the analyses completed for each sample. The field program is described in more detail in Appendix A.

3.3 Data Quality Assessment and Handling

The data quality review concluded that the quality of the data was generally very good. Data qualifiers were applied to individual results when control limits were exceeded for one or more quality control samples or procedures. A total of 15,518 results were reported for the analyses completed, excluding laboratory quality control results. Of these results, 2,437 (16 percent) were qualified as estimated (*J*), 337 (2 percent) were restated as undetected (*U*), and 30 (0.2 percent) were rejected (*R*) during data validation. One result reported for cyanide and 29 results reported for 2-butanone in sediment samples were rejected (*R*) and are not usable for any purpose. All other data, qualified and unqualified, are of sufficiently high quality for use in the BERA and feasibility study. The data quality review is presented in Appendix B. Chemical data from the supplemental field program are tabulated in Appendix C and summary statistics are presented in Appendix D.

The following information is provided to clarify the approach to handling field duplicates and replicates, determining significant digits, using undetected results, calculating PAH and PCB sums, and calculating TEQs for PCDD/Fs.

3.3.1 Field Duplicates and Replicates

Field duplicates (sometimes called “splits”) consist of material taken from a thoroughly homogenized sample collected from one location. The material is ordinarily split between two sets of bottles and labeled as representing two separate samples. Split samples may be collected and analyzed as an indication of overall precision, including the effects of both sample handling and analytical variability. In this investigation, field duplicates were collected for sediment samples only.

When samples are collected from the same station at the same time, the samples are considered field replicates. Field replicates are ordinarily collected to estimate the magnitude of natural or field variation. The term “field replicate” is used only for samples of the same type, collected with the same gear, that are *intended* to be used to assess the variability of environmental conditions. In this investigation, field replicates were collected for tissue samples.

In the case of both field duplicates and replicates, individual results are reported in the Appendix C tables. In the statistics summaries in Appendix D and in other data summarizations (e.g., discussion of nature and extent of contamination, food-web models), the analytical results of field duplicate samples were averaged to yield one value per station. When one result was detected and the other was not, one-half the detection limit of the undetected sample was included in the average. When both results were undetected, one-half the detection limits of each sample were averaged.

For tissue samples, the statistics summaries in Appendix D consider replicates as separate samples and they are not averaged in these tables or in the discussion of nature and extent of contamination in Section 3.4, unless stated otherwise. For the food-web models presented in Section 7, however, field replicates were averaged to yield one value per station. The same rules described above regarding use of undetected samples were applied.

3.3.2 Significant Digits

Tracking of significant digits becomes important when calculating averages and performing other data summaries. The reported precision of each observation was explicitly stored in a database by recording the number of significant digits. The rules for propagation of significant digits during calculations were as follows:

- **Addition and subtraction—**The place (as in one's place, ten's place, etc.) of the least significant digit of the result is equal to the highest place of the least significant digit of any of the summands.
- **Multiplication and division—**The number of significant digits of the result is equal to the least number of significant digits of any of the multiplicands. This rule may result in inappropriate loss of precision in some cases (Mulliss and Lee 1998) and an alternative rule may be used, in which one extra significant digit is maintained.

Summary statistics tables such as those in Appendix D are not automatically formatted by Exponent's database so some variability in reporting of significant figures occurs. Some of this variability may result from taking the mean of a large number of values (i.e., the significant figures in the mean are no more than the least number of significant figures in the values that make up the mean). Therefore, the number of significant digits in the Appendix D tables is not necessarily consistent with the general rules described above.

3.3.3 Undetected Results

One-half the detection limit was generally used when making a summation or averaging of undetected results, with some exceptions for PCB sums as detailed below.

One-half detection limits were also used when calculating exposure point concentrations in the food-web models for receptors with small home ranges (i.e., shrew and wren). For these receptors, the available data including undetected results were used to estimate dietary exposures on a station-by-station basis. If a chemical concentration was undetected in sediment or food at a given station, a value of one-half the detection limit was used to estimate the exposure point concentration. The food-web models are described in detail in Section 7.

For receptors that forage across a broader area (i.e., muskrat, gull, and osprey), the mean detected concentrations in sediment and food were used to calculate exposure point concentrations. As long as there was at least one detected result for a given chemical in sediment or a food item, only the detected data were used. This approach is considered conservative because it does not include values that are below the detection limit. If all values were undetected, the chemical concentration was estimated as one half of the maximum detection limit.

3.3.4 PAH and PCB Sums

Total PAH was computed as the sum of the concentrations of the following compounds:

- 2-methylnaphthalene
- Acenaphthene
- Acenaphthylene
- Anthracene
- Fluorene
- Naphthalene
- Phenanthrene
- Benz[a]anthracene
- Benzo[a]pyrene
- Benzo[b]fluoranthene
- Benzo[j]fluoranthene
- Benzo[ghi]perylene
- Benzo[k]fluoranthene
- Chrysene
- Fluoranthene
- Indeno[123-cd]pyrene
- Pyrene.

The PAH sum was calculated using one-half the detection limit for those compounds that were not detected.

Total PCB for each sample was computed as the sum of Aroclors® according to the following rules:

- If any Aroclor® was detected in the sample, all detected Aroclors® were summed and undetected Aroclors® were excluded
- If no Aroclor® was detected in the sample, the highest detection limit for any Aroclor® was used.

Aroclors® included in the sum were: 1016, 1221, 1232, 1242, 1248, 1254, and 1260.

3.3.5 PCDD/F TEQs

PCDD/F data are discussed in this report in terms of TEQs. The TEQ approach yields a single toxicity value for a mixture of PCDD/F congeners based on the relative risk of individual congeners. To calculate TEQs, the concentration of each individual congener was multiplied by its TEF. The TEF is the ratio of the toxicity of a specific congener to the toxicity of the most toxic congener (i.e., 2,3,7,8-tetrachlorodibenzo-*p*-dioxin [2,3,7,8-TCDD]) and thus provides an estimate of each congener's toxicity relative to 2,3,7,8-TCDD. One-half detection limits were used for undetected results. The resulting TEQ concentrations were then summed to produce a single TEQ concentration that approximates the toxicity of all PCDD/F congeners in the mixture relative to 2,3,7,8-TCDD. The TEFs used here are the internationally agreed upon WHO values from Van den Berg et al. (1998) as presented in Table 3-2. TEFs are available for human/mammalian, avian, and fish receptors.

3.4 Nature and Extent of Contamination

Contaminant concentrations in marsh and river sediment and biota from the 2004 supplemental investigation are discussed in this section. Complete data tables are provided in Appendix C and a statistical summary of the data is provided in Appendix D. Station locations are shown in Figure 3-1.

3.4.1 Marsh and River Sediment

Surface (0–6 in. interval) sediments from 10 site stations in the marsh, 10 site stations in the river, three marsh reference stations, and five river reference stations were submitted for full analysis. In addition, PCDD/Fs were analyzed at four additional marsh stations, one of the marsh reference stations, two of the river stations, and one of the river reference stations. Station locations are shown in Figure 3-1 and the rationale for selecting station locations is described in Section 3.2.

This section describes sediment sample results for a representative selection of analytes in each chemical group (metals, pesticides/PCBs, PCDD/Fs, VOCs, and SVOCs). Results of the sediment toxicity testing are described in Section 5.

3.4.1.1 Metals

Figures 3-2 and 3-3 show the concentrations of arsenic, chromium, copper, and mercury at site and reference stations, respectively. These metals were selected for illustration because they were considered potential contributors to ecological risk in the SLERA addendum or in this BERA. Arsenic concentrations in marsh site sediment ranged from 9.13 to 17,800 mg/kg. The highest arsenic concentration in the marsh was observed at Station 17. The next highest concentrations in the marsh (1,470 and 1,050 mg/kg) were in samples from Stations 12 and 16, located in the SPD/ADC drainage. Arsenic concentrations in marsh reference samples ranged from 6.68 to 49.9 mg/kg. Arsenic concentrations in river site sediment ranged from 9.13 to 311 mg/kg. The highest concentration was observed at Station 3, near where the SPD/ADC drainage enters the river. Arsenic concentrations in river reference samples ranged from 5.95 to 98.9 mg/kg.

Chromium concentrations in marsh site sediment ranged from 13.9 to 311 mg/kg. The highest concentrations (311 and 310 mg/kg) from the marsh were in samples from Stations 11A and 19. Chromium concentrations at marsh reference stations ranged from 15.6 to 90.3 mg/kg. Chromium concentrations in river site sediment ranged from 20.4 to 447 mg/kg. The highest concentration was observed at Station 8, which is located in the embayment where the ADC/ARC/HRDD and ARC/HRDD drainages enter the river. Chromium concentrations at river reference stations ranged from 19.1 to 171 mg/kg.

Copper concentrations in marsh site sediment ranged from 15.8 to 1,240 mg/kg. The highest copper concentrations (1,240 and 1,140 mg/kg) from the marsh were in sediment samples from Stations 14 and 19. Copper concentrations at marsh reference stations ranged from 34.5 to 314 mg/kg. Copper concentrations in river site sediment ranged from 21.8 to 695 mg/kg. The highest concentration in the river was observed at Station 4, which is located near where the SPD/ADC drainage enters the river. Copper concentrations at river reference stations ranged from 25.4 to 475 mg/kg.

Mercury concentrations in marsh site sediment ranged from 0.073 to 68 mg/kg. The highest mercury concentration from the marsh was observed at Station 17, located in the ADC/ARC/HRDD drainage. The next highest concentrations (20.5 and 15.5 mg/kg) were in samples from Stations 12 and 16, located in the SPD/ADC drainage. These three stations are also the stations with the highest arsenic concentrations. Mercury concentrations at marsh reference stations ranged from 0.18 to 1.4 mg/kg. Mercury concentrations in river sediment at the site ranged from 0.062 to 4.03 mg/kg. River site Stations 4 and 8 had the highest mercury concentrations (3.93 and 4.03 mg/kg, respectively). Mercury concentrations at river reference stations ranged from 0.078 to 3.88 mg/kg.

3.4.1.2 Pesticides/PCBs

Concentrations of γ-chlordane, 4,4′-DDT, and PCBs for site and reference stations are shown in Figures 3-2 and 3-3, respectively. These compounds were identified in this BERA (Section 7) as having hazard quotients greater than one for the short-tailed shrew at one or more stations. γ-Chlordane was detected at 7 of 10 marsh site stations, with a concentration range of 13 to 790 μg/kg. γ-Chlordane was detected at one of the three marsh reference stations at a concentration of 14 μg/kg. γ-Chlordane was detected at all river site stations with concentrations ranging from 0.27 to 47 μg/kg. γ-Chlordane was detected in at four of five river reference stations with concentrations ranging from 1 to 56 μg/kg.

4,4′-DDT was detected at all marsh site stations with a concentration range of 2.2 to 440 μg/kg. 4,4′-DDT was detected at all marsh reference stations at concentrations ranging from 12 to 30 μg/kg. 4,4′-DDT was detected at all river site stations, with a concentration range of 0.38 to 140 μg/kg. 4,4′-DDT was detected at all river reference stations with concentrations ranging from 1.2 to 62 μg/kg.

PCBs were detected at all marsh site stations, with a concentration range of 36 to 20,000 μg/kg. PCBs were detected at all marsh reference stations with concentrations ranging from 98 to 770 μg/kg. PCBs were detected at all river site stations, with a concentration range of 21 to 9,500 μg/kg. PCBs were detected in river reference stations with concentrations ranging from 58 to 4,700 μg/kg.

The highest concentrations of γ-chlordane (790 μg/kg), 4,4′-DDT (440 μg/kg), and PCBs (20,000 μg/kg) were observed at Station 22, just outside the marsh, near the former HRDD. The next highest concentrations of γ-chlordane (160 μg/kg), 4,4′-DDT (190 μg/kg), and PCBs (7,200 μg /kg) in the marsh were observed nearby at Station 17. The highest concentrations of γ-chlordane (47 μg/kg), 4,4′-DDT (140 μg/kg), and PCBs (9,500 μg/kg) in the river were observed at Station 4, near where the SPD/ADC drainage enters the river.

3.4.1.3 PCDD/Fs

PCDD/Fs were analyzed at three river sediment stations (including one river reference station) and five marsh sediment stations (including one marsh reference station). For the discussion here, results were converted to TEQs TEFs established for humans/mammals and birds by WHO (Van den Berg et al. 1998) as described in Section 3.3.5. Table 3-3 presents the TEQ values for river and marsh sediment stations. Figures 3-2 and 3-3 present the TEQs at site and reference stations, respectively.

Human/mammalian TEQ values ranged from 3.3 to 21.6 ng/kg at the four marsh site sediment stations where PCDD/Fs were analyzed, while the marsh reference station TERRREF1 had a human/mammalian TEQ value of 35.8 ng/kg. At the two river site sediment stations where PCDD/Fs were analyzed, human/mammalian TEQ values were 2.8 (average of field duplicates at Station 8) and 3.3 ng/kg while the river reference station AQUAREF3 had a human/mammalian TEQ value of 6.0 ng/kg.

Avian TEQ values ranged from 6.0 to 33 ng/kg at the four marsh site sediment stations where PCDD/Fs were analyzed, while the marsh reference station TERRREF1 had an avian TEQ value of 58.2 ng/kg. At the two river site sediment stations where PCDD/Fs were analyzed, avian TEQ values were 4.6 (average of field duplicates at Station 8) and 4.8 ng/kg while the river reference station AQUAREF3 had an avian TEQ value of 9.0 ng/kg. For both the marsh and river, the highest human/mammalian and avian TEQs were observed at the reference stations.

3.4.1.4 Volatile Organic Compounds

VOCs are not discussed in detail because they were not identified as primary contributors to ecological risk in the SLERA addendum or this BERA. This discussion briefly discusses two VOCs that were contaminants in OU-2 groundwater: TCE and 1,2,4-trichlorobenzene. TCE was detected at three of 10 marsh site stations (Stations 11A, 18A, and 22) with concentrations ranging from 0.88 to 4.1 μg/kg. TCE was detected at one of 10 river site stations (0.56 μg/kg at Station 7R). 1,2,4-Trichlorobenzene was detected at two of 10 marsh stations (Stations 18A and 19), with concentrations of 1.9 and 18 μg/kg, and was not detected at the river stations. Both TCE and 1,2,4-trichlorobenzene were undetected at the marsh and river reference stations.

The two highest TCE concentrations (4.1 and 1.8 μg/kg) were observed in samples from Stations 22 and 11A, just outside the marsh, near the former HRDD. The two 1,2,4-trichlorobenzene detections (18 and 1.9 μg/kg) were observed in samples from Stations 19 and 18A, respectively.

3.4.1.5 Semivolatile Organic Compounds

SVOCs are not discussed in detail because they were not identified as primary contributors to ecological risk in the SLERA addendum or this BERA. The following discussion is therefore limited to total PAHs, which were detected at all sediment stations. Concentrations of PAHs at marsh site stations ranged from 300 to 1,400 μg/kg. Concentrations of PAHs at marsh reference stations ranged from 250 to 910 μg/kg. Concentrations of PAHs at river site stations ranged from 35 to 3,300 μg/kg. Concentrations of PAHs at river reference stations ranged from 100 to 2,000 mg/kg. The highest concentrations in marsh and river were observed at the most upstream river Stations 1, 2, 3, and 4 with concentrations ranging from 1,400 to 3,300 mg/kg), and in the upstream river reference stations (AQUAREF2 and AQUAREF3 with concentrations of 3,300 to 1,400 mg/kg, respectively).

3.4.2 Tissue of Marsh Biota

3.4.2.1 Marsh Plant Tissue

Marsh vegetation samples were collected from five site stations and one reference station (Station TERRREF1) in the marsh as shown in Figure 3-1. Samples were analyzed for metals, pesticides/PCBs, and SVOCs.

Metals—Arsenic concentrations in site stations ranged from 1.1 to 13.3 mg/kg (ww) with the highest concentration observed at Station 11A. The next highest concentrations were at Station 13 (5.73 mg/kg [ww]) and Station 22 (5.3 mg/kg [ww]). The arsenic concentration at the reference station was 2.1 mg/kg (ww).

Chromium concentrations in site stations ranged from 2.9 to 31.5 mg/kg (ww). The highest concentration was observed at Station 22. The next highest concentrations were at Station 13 (4.5 mg/kg [ww]), Station 13A (5.25 mg/kg [ww]), and one replicate at Station 14 (7.96 mg/kg [ww]). The lowest concentration was observed at Station 11A. The chromium concentration at the reference station was 3.2 mg/kg (ww).

Copper concentrations in site stations ranged from 9.9 to 91.4 mg/kg (ww) with the highest concentration observed in one replicate at Station 14. At the reference station, the copper concentration was 12.2 mg/kg (ww). Two of the site stations (Stations 11A and 13A) had copper concentrations below that observed at the reference station.

Mercury concentrations in plant tissue from site stations ranged from 0.079 to 1.6 mg/kg (ww). Station 22 had the highest concentration. The concentration at the reference station was 0.045 mg/kg (ww).

Pesticides/PCBs—Pesticides were undetected in most of the plant tissue samples. γ-Chlordane was detected in samples from four site stations at concentrations ranging from 0.72 to 31 μg/kg (ww). The highest concentration was observed at Station 22, an upland station at the edge of the HRDD. The second highest concentration was 1.1 μg/kg (ww) at Station 11A. The sample from the reference station also contained γ-chlordane at a concentration of 1.1 μg/kg (ww).

4,4′-DDT was detected in plant tissue samples from two site stations (Stations 13 and 13A) with concentrations of 6.5 and 2.0 μg/kg (ww), respectively. 4,4′-DDT was detected in the sample from the reference station at a concentration of 2.2 μg/kg (ww).

PCBs were detected in all samples, with concentrations ranging from 16 to 28 μg/kg (ww) at the site stations, with the exception of Station 22, which had a PCB concentration of 1,400 μg/kg (ww). The PCB concentration at reference station was 16 μg/kg (ww). With the exception of Station 22 where Aroclor® 1248 was also detected, Aroclor® 1254 was the only Aroclor® detected in the plant tissue samples.

Semivolatile Compounds—Total PAHs were detected in all samples, with concentrations ranging from 78 to 240 μg/kg (ww) with the highest concentration observed in plant tissue from Station 13A, an upland marsh location. The concentration of total PAHs in the reference Station TERRREF1 was 72 μg/kg (ww).

3.4.2.2 Marsh Insect Tissue

Marsh insects (also identified as terrestrial invertebrates) were collected by pit-fall traps, sweeps, and gloved hands from one site-wide station and one reference station in the marsh. The following insects were identified by common name: beetle, centipede, crane fly, cricket, millipede, praying mantis, sowbug, and spider. These insects were included in the composite samples along with occasional earthworms that were trapped. The largest component of the composite samples was a single praying mantis in each of the two samples (i.e., 21.9 of 23.4 grams [g] and 20.1 of 21.1 g in the site-wide and reference samples, respectively). Composite samples were analyzed for metals and pesticides/PCBs.

Metals—For six metals (inorganic chemicals), concentrations were higher in the reference sample than in the site sample. These analytes were barium, calcium, magnesium, potassium, selenium, and sodium. For all other metals, concentrations were higher in the site sample than in the reference sample. Arsenic concentrations in the site and reference samples were 0.59 and 0.065 mg/kg (ww), respectively. Chromium concentrations in the site and reference samples were 0.89 and 0.4 mg/kg (ww), respectively. Copper concentrations in the site and reference samples were 41.9 and 22.6 mg/kg (ww), respectively. Lead concentrations in the site and reference samples were 0.74 and 0.19 mg/kg (ww), respectively, and mercury concentrations in the site and reference samples were 0.047 and 0.019 mg/kg (ww), respectively. These metals (arsenic, chromium, copper, and lead) were selected for discussion because they had hazard quotients exceeding one for the no-observed-adverse-effect level (NOAEL) in the food-web model for the marsh wren where terrestrial invertebrates were a major component of the diet (as discussed in Section 7 of this BERA).

Pesticides/PCBs—Most of the pesticides were undetected in both site and reference samples. α-Chlordane was detected in both site and reference samples at concentrations of 1.0 and 0.89 μg/kg (ww), respectively. Four other pesticides (4,4′-DDT, dieldrin, γ-chlordane, and heptachlor epoxide) were detected in site samples only. Of these, concentrations of dieldrin and heptachlor epoxide (1.4 and 2.0 μg/kg (ww), respectively) were below the detection limit of 2.1 μg/kg (ww) for the reference sample. Concentrations of 4,4′-DDT and γ-chlordane (4.1 and 3.8 μg/kg [ww], respectively) exceeded the reference sample detection limits (2.4 and 2.1 μg/kg, respectively).

PCBs were detected in the site sample at a concentration of 75 μg/kg (ww) and were undetected in the reference sample.

3.4.2.3 Small Mammal Tissue

North American deer mice (*Peromyscus maniculatus*) were collected from four site stations and one reference station (Station TERRREF1) in the marsh as shown in Figure 3-1. Composite samples of these small mammals were analyzed for metals, pesticides/PCBs, and SVOCs, sample size permitting.

Metals—Arsenic concentrations in small mammals ranged from 0.023 to 0.27 mg/kg (ww). Like the plant tissue samples, the highest arsenic concentration in small mammals was observed at Station 11A. The reference station concentration was 0.055 mg/kg (ww). Chromium concentrations ranged from 0.21 to 0.44 mg/kg (ww) and the reference station concentration was 0.33 mg/kg (ww).

Copper concentrations ranged from 2.7 to 9.72 mg/kg (ww) while the concentration at the reference station was 3.63 mg/kg (ww). Finally, mercury concentrations ranged from 0.0047 to 0.019 mg/kg (ww) with the highest concentration observed at Station 11A and the second highest concentration at Station 22 (0.018 mg/kg [ww]). The mercury concentration in small mammal tissue from the reference station was 0.0039 mg/kg (ww).

Pesticides/PCBs—Most pesticides, including γ-chlordane, were undetected in small mammal samples. 4,4′-DDT was detected in all samples, with concentrations ranging from 1.3 to 13 μg/kg (ww) at the site stations and a concentration of 1.0 μg/kg (ww) at the reference station. The highest concentration was observed at Station 22; the next highest concentration (2.4 μg/kg [ww]) was observed at Station 13A.

PCBs were detected in mammals from all site stations with concentrations ranging from 11 to 110 μg/kg (ww). PCBs were undetected in mammals from the reference station.

SVOCs—Due to sample mass limitations, SVOCs were analyzed in three site stations and one reference station. The concentration of total PAHs was highest at the reference station (7.6 μg/kg [ww]). Detected concentrations at the site stations were 3.6 and 4.2 μg/kg (ww) at Stations 22 and 14A, respectively.

3.4.2.4 Blackworm and Earthworm Tissue from Bioaccumulation Testing

Laboratory bioaccumulation tests were run on marsh sediment samples using blackworms and earthworms. Blackworms from nine marsh stations on the site and three marsh reference stations were analyzed for metals and pesticides/PCBs. Earthworms from ten marsh stations on the site and three marsh reference stations were analyzed for metals, pesticides/PCBs, and SVOCs.

Metals—In blackworms, arsenic concentrations ranged from 1 to 57.6 mg/kg (ww) at the site stations and 2 to 5.7 mg/kg (ww) at the reference stations. Blackworm chromium concentrations ranged from 0.15 to 4.18 mg/kg (ww) at the site stations and 0.56 to 1.67 mg/kg (ww) at the reference stations. Copper concentrations ranged from 2.34 to 49 mg/kg (ww) in blackworms from the site stations and 4.12 to 40.2 mg/kg (ww) at the reference stations. Mercury concentrations in blackworms ranged from 0.062 to 39.2 mg/kg (ww) at the site stations and 0.17 to 1.3 mg/kg (ww) at the reference stations.

In earthworms, arsenic concentrations ranged from 2.45 to 328 mg/kg (ww) at the site stations and 2.8 to 5.11 mg/kg (ww) at the reference stations. Chromium concentrations ranged from 0.89 to 5.67 mg/kg (ww) at the site stations and 0.72 to 1.95 mg/kg (ww) at the reference stations. Copper concentrations ranged from 3.05 to 43.6 mg/kg (ww) in earthworms from the site stations and 2.66 to 9.06 mg/kg (ww) at the reference stations. Mercury concentrations in earthworms ranged from 0.07 to 1.94 mg/kg (ww) at the site stations and 0.092 to 0.11 mg/kg (ww) at the reference stations.

Pesticides/PCBs—In blackworms, γ-chlordane was detected in five of eight site samples, with concentrations ranging from 16 to 210 μg/kg (ww). γ-Chlordane was undetected in samples from the reference stations. 4,4′-DDT was detected in three of eight site samples, with concentrations ranging from 1.7 to 29 μg/kg (ww). 4,4′-DDT was detected at one of the reference stations with a concentration of 8.2 μg/kg (ww). PCBs were detected in all blackworm samples, with concentrations ranging from 64 to 11,000 μg/kg (ww) at the site stations and 82 to 260 μg/kg (ww) at the reference stations.

In earthworms, γ-chlordane was detected in seven of nine site samples, with concentrations ranging from 2.9 to 180 μg/kg (ww) while concentrations at the reference stations ranged from 3.2 to 11 μg/kg (ww). 4,4′-DDT was detected in six of nine site samples, with concentrations ranging from 6.9 to 41 μg/kg (ww). The 4,4′-DDT concentrations in earthworms from the two reference stations where it was detected were 7.8 and 11 μg/kg (ww); 4,4′DDT was undetected at the third reference station. PCBs were detected in all samples, with concentrations ranging from 190 to 9,300 μg/kg (ww) in samples from the site stations and 180 to 550 μg/kg (ww) in samples from the reference stations.

SVOCs—Because of sample mass limitations, SVOCs were analyzed in earthworm samples from only one site station and two reference stations, and they were not analyzed in blackworm samples. The concentration of total PAHs in earthworms from the one site station was 60 μg/kg (ww). Earthworm PAH concentrations at the two reference stations were 66 and 72 μg/kg (ww).

3.4.3 Tissue of River Biota

3.4.3.1 River Crab Tissue

Crabs were collected from baited minnow traps at seven river stations at the site and two reference stations (Stations AQUAREF 1 and AQUAREF4) shown in Figure 3-1. The following species of crabs were included: fiddler crab (*Uca* sp.), white-fingered mud crab (*Rithropanopeus harrisii*), and blue crab (*Callinectes sapidus*). With one exception, composite samples from each station were analyzed. At Station 10, only one crab (a blue crab) was collected and it was submitted for analysis. Small sample masses precluded analysis of all analytes at all stations. Table B1-1 in Appendix B shows which analyses were completed for each station. As with the discussion of sediment sample results, a representative selection of analytes in each chemical group (metals, pesticides/PCBs, PCDD/Fs) is discussed here.

Metals—Arsenic concentrations in crab samples from the river stations ranged from 0.66 to 2.7 mg/kg (ww). The highest arsenic concentration was observed at Station 5; a maximum of 0.85 mg/kg (ww) was observed in crab samples from other stations. Arsenic concentrations in crabs from the river reference stations were 0.72 and 0.71 mg/kg (ww), respectively. Chromium concentrations in crab samples from the river stations ranged from 0.17 to 0.95 mg/kg (ww). The highest chromium concentrations (0.95 and 0.86 mg/kg [ww]) were observed at Stations 5 and 3, respectively; a maximum of 0.47 mg/kg (ww) was observed in crab samples from other stations. Chromium concentrations in crabs from the river reference stations were 0.21 and 0.14 mg/kg (ww), respectively.

Copper concentrations in crab samples from the river stations ranged from 7.87 to 22.7 mg/kg (ww). The highest copper concentrations (22.7 and 19.3 mg/kg [ww]) were observed at Stations 5 and 3, respectively; a maximum of 15.0 mg/kg (ww) was observed in crab samples from other stations. Copper concentrations in crabs from the river reference stations were 11.1 and 16.0 mg/kg (ww), respectively.

Mercury concentrations in crab samples from the river stations ranged from 0.015 to 0.024 mg/kg (ww) and were within the range of concentrations at the two reference stations (0.012 and 0.032 mg/kg [ww] at Stations AQUAREF4 and AQUAREF1, respectively).

For all metals other than cadmium and silver (which had the highest concentrations at reference Station AQUAREF4) and mercury (which had the highest concentration at reference Station AQUAREF1), the highest concentration was observed in the crab sample from Station 5. For aluminum, chromium, copper, iron, and manganese, the second highest concentration was observed at Station 3. Stations 3 and 5 are located just upstream and downstream of where the SPD/ADC drainage enters the river.

Pesticides/PCBs—Because of sample mass limitations, pesticides/PCBs were analyzed in crab samples from five of the seven site stations and none of the reference stations. The following pesticides were detected in one or more samples (number of detected values appears in parentheses): 4,4′-DDD (5), 4,4′-DDE (5), 4,4′-DDT (5), α-chlordane (2), α-endosulfan (5), dieldrin (4), endosulfan sulfate (1), endrin aldehyde (2), γ-chlordane (1), and heptachlor epoxide (2). The concentration ranges for 4,4′-DDD, 4,4′-DDE, and 4,4′-DDT were 4.3 to 16, 5.9 to 22, and 2.8 to 7.4 μg/kg (ww), respectively. PCBs were detected in all samples, with concentrations ranging from 26 to 81 μg/kg (ww). When detected, the lowest concentrations of pesticides and PCBs in crab tissue were at Station 9, which is located in the small embayment at the north end of the site.

PCDD/Fs—PCDD/Fs were analyzed in crab samples from two site stations and one reference station. The data were converted to TEQs using fish TEFs established by WHO (Van den Berg et al. 1998) as described in Section 3.3.1.5. Fish TEFs were used because they were considered more suitable than human/mammalian or avian TEFs for addressing the potential risk to crabs.

TEQs for the crab samples from site Stations 8 and 9 were 1.0 and 0.80 ng/kg (ww), respectively. The TEQ value for the reference Station AQUAREF1 was 0.54 ng/kg (ww).

3.4.3.2 Estuarine Fish Tissue

Estuarine fishes (*Fundulus* spp.) were caught at 10 river stations from the site and two reference stations. With the exception of the downstream reference station, fishes were composited into three samples that were submitted for analysis. Two composite samples from the downstream reference station were submitted for analysis. In the following discussion, the three replicate samples from each station were not averaged and data are reported for each sample, unless stated otherwise.

To assess potential risks to estuarine fishes, contaminant concentrations in fish samples were compared to tissue residue values in Section 6 of this report. Tissue residue values and their sources are discussed in greater detail in Section 6.

Metals—Section 6 of this BERA identifies aluminum, lead, mercury, selenium, and silver as having at least one exceedance of a fish tissue residue value. The following discussion therefore focuses on these five metals.

Aluminum concentrations in estuarine fish samples from both site and reference stations exceeded the tissue residue value (<8 mg/kg [ww]) in all but one sample. Concentrations ranged from 6.79 to 242 mg/kg (ww) at the site stations and 10.9 to 55.8 mg/kg (ww) at the reference stations.

Lead concentrations in estuarine fish samples ranged from 0.059 to 0.62 mg/kg (ww) at the site stations and 0.091 to 0.24 mg/kg (ww) at the reference stations. Stations 5 and 9 each had one sample exceeding the tissue residue value (0.4 mg/kg [ww]) but the station average was below this value. The tissue residue value was exceeded in two of three samples at Station 8 and in the station average for this station.

Mercury concentrations in estuarine fish samples ranged from 0.016 to 0.041 mg/kg (ww) at the site stations and 0.017 to 0.022 mg/kg (ww) at the reference stations. Only Station 8 had a sample exceeding the tissue residue value (0.04 mg/kg [ww]) but the station average was below this value.

Selenium concentrations in estuarine fish samples ranged from 0.36 to 0.67 mg/kg (ww) at the site stations and 0.32 to 0.45 mg/kg (ww) at the reference stations. Only Station 7R had a sample exceeding the tissue residue value (0.66 mg/kg [ww]), but the station average was below this value.

Silver concentrations in estuarine fish samples exceeded the tissue residue value of 0.06 mg/kg (ww) in at least one sample from each site and reference station. Concentrations ranged from 0.054 to 0.098 mg/kg (ww) at the site stations and 0.04 to 0.062 mg/kg (ww) at the reference stations.

Pesticides/PCBs—None of the pesticides or PCBs exceeded tissue residue values in Section 6 of this BERA. This discussion briefly summarizes the data for analytes with tissue residue values (4,4′-DDD, 4,4′-DDE, 4,4′-DDT, dieldrin, heptachlor epoxide, and PCBs) in Section 6 and for γ-chlordane. 4,4′-DDD and 4,4′-DDE were each detected in all 30 fish samples from site stations, with concentrations ranging from 15 to 36 μg/kg (ww) and 20 to 35 μg/kg (ww), respectively. These ranges were similar to those reported for the 1999 investigation (32 to 60 and 38 to 66 μg/kg (ww) for 4,4′-DDD and 4,4′-DDE, respectively). 4,4′-DDT was detected in 15 of 30 fish samples, with concentrations ranging from 8.6 to 12 μg/kg (ww). These three pesticides were detected in all five samples from the reference stations with concentrations ranging from 20 to 32 μg/kg (ww), 23 to 33 μg/kg (ww), and 7.6 to 10 μg/kg (ww), respectively.

Dieldrin was detected in 27 of 30 fish samples from site stations with concentrations ranging from 1.6 to 4.6 μg/kg (ww), while at the reference stations dieldrin was detected in all samples, with concentrations ranging from 2.3 to 3.3 μg/kg (ww). Heptachlor epoxide was detected in 29 of 30 fish samples from site stations with concentrations ranging from 2.2 to 6.6 μg/kg (ww). At the reference stations, heptachlor epoxide was detected in all samples, with concentrations ranging from 4.4 to 6.8 μg/kg (ww). In the 1999 fish samples (CDM 2002b), detected concentrations of dieldrin and heptachlor epoxide were slightly higher than in 2004 (i.e., 12 and 14 to 18 μg/kg (ww) for dieldrin and heptachlor epoxide, respectively).

γ-Chlordane was detected in all 30 fish samples from site stations with concentrations ranging from 3.9 to 11 μg/kg (ww), while at the reference stations γ-chlordane was detected in all samples, with concentrations ranging from 3.9 to 6.1 μg/kg (ww).

PCBs were detected in all fish samples from both site and reference stations. Concentrations at site stations ranged from 450 to 810 μg/kg (ww) and concentrations at reference stations ranged from 500 to 660 μg/kg (ww). Concentrations at the upstream reference station (620 to 660 μg/kg [ww] at AQUAREF1) were higher than at the downstream reference station (500 and 520 μg/kg [ww] at AQUAREF4). The concentration range of Aroclor® 1260 observed in samples from site stations (150 to 270 μg/kg [ww]) was similar to that observed in 1999 (190 to 300 μg/kg [ww]).

PCDD/Fs—PCDD/Fs were analyzed in triplicate estuarine fish samples from site Stations 8 and 9 and reference Station AQUAREF1. Results were converted to TEQs using TEFs established for fish by WHO (Van den Berg et al. 1998) as described in Section 3.3.1.5. Table 3-4 presents the TEQ values for estuarine fish samples.

TEQs in individual samples ranged from 0.26 to 1.1 ng/kg (ww) at the site stations and 1.5 to 1.8 ng/kg (ww) at the reference station. The average value for the reference station (1.7 ng/kg [ww]) was greater than the average values at Stations 8 and 9 (1.0 and 0.7 ng/kg (ww), respectively).

SVOCs—SVOCs were not identified as potential risk contributors in the SLERA addendum or this BERA and a majority of the SVOCs were undetected in estuarine fish samples. Results for total PAHs are summarized here.

PAH concentrations in estuarine fish samples ranged from 12 to 190 μg/kg (ww) at the site stations and 13 to 23 μg/kg (ww) at the reference stations. The highest site concentration was in one of the triplicate samples from Station 7R; however, the other two samples had concentrations of 23 and 22 μg/kg (ww). The second highest concentration (61 μg/kg [ww]) was observed in one of the triplicate samples from Station 5, while the other two samples had concentrations of 15 and 19 μg/kg.

3.5 Conceptual Model of Contaminant Transport and Fate in OU-3

The patterns of contaminant concentrations in OU-3 provide important information on contaminant sources, the nature and extent of contamination, and contaminant transport and fate at the site. Figures 3-4, 3-5, and 3-6 show the combined data for arsenic, mercury, and PCBs, respectively, in soil and sediment from the 2004 and historical investigations. While patterns of contamination are evident, the fact that most marsh stations are located in drainage channels where contaminant concentrations are expected to be highest precludes extrapolation of the data set to the entire marsh. The areas between channels are currently not well represented in the data set.

The 2004 data support the conceptual understanding from the remedial investigation (CDM 1999a) that the primary contaminant transport pathway from upland areas to the marsh is surface runoff through drainage channels. The SPD/ADC drainage is of particular concern because of the elevated concentrations of arsenic, mercury, and PCBs in sediment. Concentrations of these contaminants in the SPD/ADC drainage are often higher than on the upland properties, possibly because previous remedial actions have removed material with higher contaminant concentrations. Nevertheless, most of the highest observed concentrations of arsenic, mercury, and PCBs in upland soil and sediment were found on the ADC property, suggesting that ADC is the likely upland source of these contaminants to the SPD/ADC drainage.

The ADC/ARC/HRDD drainage also appears to be a transport pathway for mercury and PCBs, though to a much lesser extent than the SPD/ADC drainage, perhaps as a result of intermittent flow in the ADC/ARC/HRDD drainage. Although mercury and PCBs were found on ARC property, downstream concentrations in the ARC/HRDD drainage and nearby marsh are very low, suggesting little if any transport of these contaminants from the ARC property to the marsh. This is perhaps a result of the intermittent flow in the ARC/HRDD drainage, or of lower initial masses of these contaminants on the ARC property relative to the ADC property.

Contaminant concentrations in the river are generally considerably lower than in the marsh, indicating attenuation as surface runoff flows through the marsh to the river. The highest concentrations in river sediment tend to be near where the SPD/ADC drainage enters the river. As in the marsh, contaminant concentrations tend to decrease with depth in the sediment.

Regarding groundwater transport to the marsh, the 2004 data support earlier conclusions that there is no evidence that groundwater transport of contaminants (e.g., VOCs) is impacting marsh sediment. VOC concentrations in marsh and river sediment continue to be very low or undetected.

4 Problem Formulation for the Baseline Ecological Risk Assessment

In this phase of the BERA, the components of the screening-level problem formulation are reviewed and refined where necessary by taking into account various kinds of site-specific information obtained during the supplemental field investigation. A preliminary problem formulation, including site characterization, preliminary selection of chemicals of potential concern (CoPCs), and preliminary selection of ecological receptors, assessment endpoints, and measurement endpoints was presented in Chapter 2 of the SLERA addendum (CDM 2002b). Sections 1 through 3 of this BERA re-examined the site characterization presented in the SLERA addendum, providing a description of the Sites and their regulatory history, and a summary of data from the historical investigations and the supplemental field investigation conducted in 2004. Other major components of the problem formulation are addressed in the subsections below and include the following:

- Refinement of the list of CoPCs
- Review of information on CoPC transport and fate, ecosystems potentially at risk, and complete exposure pathways
- Refinement of assessment and measurement endpoints
- Refinement of the ecological conceptual site model (CSM).

4.1 Refinement of Contaminants of Concern

The SLERA addendum identified an extensive list of chemicals, including VOCs, SVOCs, pesticides/PCBs, and inorganic compounds as CoPCs in marsh and river sediment based on comparison to state and federal sediment quality guidelines (SQGs) (CDM 2002b). Most of these SQGs address potential risk to benthic aquatic macroinvertebrates from sediment toxicity. Consistent with the work plan (Exponent 2004), this BERA uses sediment chemistry data collected during the 2004 supplemental field investigation, in conjunction with sediment toxicity tests using representative aquatic macroinvertebrate species, to identify chemicals of concern for sediments with respect to direct toxicity to aquatic macroinvertebrates. Thus, the sediment toxicity-related CoPCs identified in the SLERA addendum are not refined during this problem formulation step. Rather, Section 5 of this BERA identifies chemicals of concern with the potential for unacceptable sediment toxicity to aquatic macroinvertebrates at the site.

Potential risks to estuarine fishes were assessed in the SLERA addendum based on comparison of water CoPC concentrations to screening benchmarks and comparison of tissue CoPC concentrations to literature-based adverse effect levels (CDM 2002b). The SLERA addendum concluded that only copper could potentially cause adverse effects to estuarine fishes in the Raritan River. Given that only one chemical is identified as a possible risk driver for estuarine fishes, further refinement of CoPCs is unnecessary. Water chemistry analyses were not performed during the 2004 supplemental investigation, so no further comparison to water screening benchmarks is made in this BERA. However, fish tissue data collected during the 2004 supplemental investigation are compared to literature-based adverse effects levels in Section 6, to determine if conclusions reported in the SLERA addendum regarding potential risks to estuarine fishes are supported by more recent data.

Finally, to assess risk to wildlife receptors, the SLERA addendum used screening-level food-web models to estimate daily dietary exposures to CoPCs for wildlife receptors and concluded that there was a high potential for adverse effects to higher trophic level receptors that forage in the marsh and river (CDM 2002b). As summarized in Section 2.4 of this BERA, arsenic, chromium, and iron were identified as the primary risk contributors in the marsh, while chromium and zinc were identified as the primary risk contributors in the river (CDM 2002b). However, CoPC concentrations in food were modeled in the screening assessment using theoretical bioaccumulation factors, an approach that is appropriate for screening but may have overestimated or underestimated actual exposure from food ingestion. Furthermore, the work plan for the supplemental investigation in 2004 required analysis of metals, SVOCs, VOCs, and pesticides/PCBs in sediment samples and metals, SVOCs, and pesticides/PCBs in tissue samples. In addition, PCDD/Fs were analyzed in a subset of sediment and tissue samples. One purpose of this extensive analysis was to provide site-specific data for the food-web models. Thus, the list of CoPCs for wildlife from the SLERA addendum was not refined, and a broad suite of organic and inorganic chemicals was selected for further consideration in the BERA, including metals, SVOCs, pesticides/PCBs, and PCDD/Fs. The CoPCs evaluated in the BERA food-web models are presented in Table 4-1.

4.2 Contaminant Transport and Fate, Ecosystems Potentially at Risk, and Complete Exposure Pathways

The following sections briefly discuss contaminant transport and fate in the marsh and river, and the exposure pathways to ecological receptors that use these environments.

4.2.1 Contaminant Transport and Fate

Contaminant transport and fate are functions of the physical and chemical characteristics of the contaminant as well as the system through which it has potential to be transported. An important chemical characteristic for contaminants in aquatic systems is solubility in water. Potential contaminants in and immediately around OU-3 include some that are relatively insoluble (e.g., lipophilic organic chemicals such as PCBs and PAHs). Transport and fate of these relatively insoluble contaminants are generally associated with that of particles (especially particulate organic carbon in the case of most organic contaminants). These insoluble contaminants can be carried short distances on particles before settling to the sediment bed. Mercury behaves similarly to insoluble organic contaminants, because it has a high affinity for solids and organic carbon.

In addition to particle transport in surface runoff through drainage channels to the marsh and, eventually, the Raritan River, contaminated river sediment may become resuspended and transported by currents and tidal action or deposited on floodplains such as the OU-3 marsh during high flow events. Contaminated river sediment can also be deposited directly on adjacent floodplains during dredging operations (as referenced in the ROD [U.S. EPA 2004]). Finally, erosion could carry contaminated marsh sediment into the river, although the marsh is densely vegetated with *Phragmites,* which minimizes the potential for erosion.

The fate of insoluble contaminants is resuspension and transport in surface water and, ultimately, burial in the sediments (as sediment is deposited from above). An alternative fate of bioaccumulative contaminants, such as methylmercury and PCBs, is sequestration in biological tissue.

Potential contaminants in and immediately around OU-3 also include some that are water-soluble (e.g., copper and zinc). Water-soluble contaminants are transported primarily in dissolved form in surface water such as surface water runoff or drainage from the upland areas of the Sites or surface water from the Raritan River to the OU-3 marsh during high flow events. Water-soluble contaminants may remain in dissolved form, volatilize into the atmosphere, or become incorporated into biological tissue. Dissolved contaminants can also precipitate or adsorb to particles if chemical conditions (e.g., pH, redox) permit. While soluble contaminants can be transported in groundwater, groundwater flow at the Sites is severely retarded by the presence of a silt and clay matrix. The volume of groundwater that discharges from the Sites to the marsh and Raritan River is exceedingly low and unlikely to be a significant transport pathway (CDM 2003; U.S. EPA 2004).

Some CoPCs may be subject to transformation (e.g., mercury methylation, biodegradation of organic contaminants). Mercury methylation occurs in sediment or water under anoxic conditions that favor sulfate-reducing bacteria. Methylation rates are primarily a function of ecosystem characteristics (e.g., dissolved oxygen) rather than total mercury concentrations. Biodegradation of organic contaminants can be significant for certain chemicals under conditions favoring bacterial activity.

4.2.2 Ecosystems Potentially at Risk

Ecosystems potentially at risk include the freshwater marsh and the Raritan River reach adjacent to the Sites. Within these ecosystems, aquatic organisms (i.e., benthic macroinvertebrates and estuarine fishes) are potentially at risk from exposure to CoPCs in sediment, water, and food. Birds and mammals that consume fishes, invertebrates, marsh plants, or small mammals exposed to media at OU-3 are also potentially at risk from exposure to CoPCs in prey organisms and sediment.

Exposure to CoPCs can affect the marsh and river ecosystems at the organism, population, and community levels. For example, ecological risk to aquatic macroinvertebrates and fishes may manifest itself as adverse impacts on survival and reproduction of individual organisms, abundance and production of populations, or community structure. For wildlife species, risk may manifest itself as adverse impacts on organism growth, survival, and reproduction.

4.2.3 Complete Exposure Pathways

An exposure pathway is the course a chemical takes from a source to an exposed receptor. Exposure pathways consist of the following four elements: 1) a source; 2) a mechanism of release, retention, or transport of a chemical to a given medium (e.g., sediment, surface water); 3) a point of receptor contact with the medium (i.e., exposure point); and 4) a route of exposure at the point of contact (e.g., incidental ingestion, dermal contact). If any of these elements is missing, the pathway is considered incomplete (i.e., it does not present a means of exposure). Only those exposure pathways judged to be potentially complete are of concern for ecological exposure.

Complete exposure pathways via direct contact, ingestion, and bioaccumulation exist for organisms associated with surface water and sediment in the marsh and river portions of OU-3. Direct contact and ingestion of surface water and sediments may expose invertebrates and fishes to CoPCs. Direct exposure of aquatic and terrestrial invertebrates to CoPCs in sediment is evaluated in the sediment toxicity tests described in Section 5. Exposure of fishes to CoPCs in sediment is not directly evaluated in the BERA. As described in Section 6, risks to fishes are screened using two methods: comparison of CoPC concentrations in water samples with screening benchmarks and comparison of CoPC concentrations in fish tissue with whole body residue effects levels. Tissue concentrations represent an integration of the exposure that fishes receive via diet, water, and sediment exposure. Therefore, comparison of tissue concentrations to tissue residue effects levels constitutes an indirect evaluation of direct exposure to CoPCs in sediment.

Birds and mammals may be exposed to CoPCs through the ingestion of foods such as plants, invertebrates, fish, and small mammals, and the incidental ingestion of marsh or river sediments for some CoPCs. Bioaccumulation at each level of the food web can increase the chemical exposure concentration to many times the original concentration found in water and sediments. A complete exposure pathway via bioaccumulation exists for upper trophic-level species (e.g., piscivorous birds) for CoPCs such as methylmercury and PCBs that bioaccumulate. Direct exposure of avian and mammalian receptors to CoPCs in sediment and food is evaluated in Section 7, where food-web exposure models are used to estimate total dietary intake of receptors.

4.3 Selection of Assessment Endpoints, Measurement Endpoints, and Indicator Species

EPA guidance states that ERAs should use site-specific assessment endpoints that address chemical-specific potential adverse effects to local populations and communities of plants and animals (U.S. EPA 1999). Consistent with this guidance, assessment endpoints for this BERA were selected, taking into account their biological significance, their susceptibility to potential contact through direct or indirect exposure to CoPCs, and the availability of pertinent assessment models and toxicological information in the literature. The assessment endpoints for the BERA are:

- Aquatic macroinvertebrate community abundance and population production in marsh sediment
- Terrestrial invertebrate community abundance and population production in marsh sediment
- Estuarine fish population abundance and community structure in the Raritan River
- Wildlife population abundance (including local populations of avian and mammalian invertivores, mammalian herbivores, and avian carnivores, piscivores, and omnivores) in the marsh and Raritan River.

Measurement endpoints provide the actual measurements used to evaluate attainment of each assessment endpoint. The measurement endpoints for this BERA (in relation to their respective assessment endpoints) are as follows:

Assessment Endpoint: Aquatic macroinvertebrate community abundance and population production in marsh sediment

Measurement Endpoints

- Sediment toxicity based on laboratory tests of field-collected marsh sediments using a sensitive and representative aquatic macroinvertebrate species (*Lumbriculus variegatus*) and two sensitive test endpoints (survival and growth).

Assessment Endpoint: Terrestrial invertebrate community abundance and population production in marsh sediment

Measurement Endpoints

- Sediment toxicity based on laboratory tests of field-collected marsh sediments using a sensitive and representative terrestrial invertebrate species (*Eisenia fetida*) and two sensitive test endpoints (survival and growth).

Assessment Endpoint: Estuarine fish population abundance and community structure in the Raritan River

Measurement Endpoints

- Measured concentrations of CoPCs in Raritan River water compared to state water quality standards
- Measured concentrations of CoPCs in estuarine fishes of the Raritan River compared to literature-based effect-level thresholds.

Assessment Endpoint: Abundance of avian and mammalian populations in the marsh and Raritan River

Measurement Endpoints

- Modeled dietary doses of CoPCs based on measured concentrations of CoPCs in prey organisms and marsh or river sediments compared with toxicity reference values (TRVs).

In order to model dietary exposure to CoPCs for wildlife, receptors (indicator species) were selected to represent different functional groups of organisms that use the marsh or river. These receptors occupy different trophic levels and use different habitats at OU-3, but all may be expected to occur in the marsh or river, and all have foraging habits that could bring them into contact with site-related CoPCs. The following receptors were selected to represent marsh wildlife:

- Short-tailed shrew (represents mammalian invertivores)
- Muskrat (represents mammalian herbivores)
- Marsh wren (represents avian invertivores)
- Red-tailed hawk (represents avian carnivores).

The following receptors were selected to represent Raritan River wildlife:

- Osprey (represents avian piscivores)
- Herring gull (represents avian omnivores).

Table 4-2 summarizes the assessment endpoints, measurement endpoints, and receptors selected for the BERA, and states the approach used to evaluate each endpoint. In some cases, given the limitations of the available data, the selected measurement endpoints do not provide direct measures of the assessment endpoints. In such cases, every effort has been made to evaluate the implications of the measurement endpoint results for the assessment endpoints, and the resulting uncertainties are acknowledged.

4.4 Ecological Conceptual Site Model

An ecological CSM, which identified exposure pathways and potentially exposed receptor species, was presented in the work plan (Exponent 2004). This ecological CSM is shown in Figure 4-1. Based on data and observations from the supplemental field investigation, there is no indication that additional pathways or receptors exist beyond those identified in the work plan. Also, there is no indication to suggest that any of the previously identified pathways are incomplete. Therefore, no additional refinement of the ecological CSM is warranted.

5 Sediment Toxicity Assessment

This section presents the results of the sediment toxicity tests conducted at OU-3 using the terrestrial earthworm *Eisenia fetida* and the freshwater blackworm (i.e., oligochaete) *Lumbriculus variegatus*. As discussed previously, the toxicity tests were conducted for 10 stations located throughout the OU-3 marsh and for 3 marsh reference stations during the 2004 sampling event. Statistical comparisons were made between the results for each OU-3 station and the pooled results for the three reference stations.

This section also describes the development of site-specific (i.e., specific to OU-3) sediment quality values (SQVs) using the synoptic information collected on sediment chemistry and sediment toxicity at OU-3. The site-specific SQVs are then used to develop risk indices to prioritize stations on the basis of risks to invertebrates. It should be noted that the SQVs discussed in this section pertain to sediment toxicity to terrestrial and aquatic invertebrates and do not address potential bioaccumulation. Bioaccumulation and risks to wildlife receptors are addressed in Section 7 of this BERA.

Although the present section discusses the results of toxicity testing conducted only for marsh sediments, historical sediment toxicity testing near the site was conducted in the Raritan River (CDM 2002a). The sediment toxicity test was the 28-day chronic test using the estuarine amphipod *Leptocheirus plumulosus*. With one exception, amphipod survival results in the sediment samples from site stations were statistically similar to survival at the reference station. At one station (RSD07), amphipod survival was statistically lower than survival at the reference station. That station was located offshore of where the SPD/ADC drainage enters the Raritan River. Growth and reproduction (i.e., the two sublethal endpoints evaluated in the toxicity tests) were also lowest at that station, although no statistical comparisons with reference conditions were made.

5.1 Summary of Sediment Toxicity Results

The results of the blackworm and earthworm tests are discussed in this section.

5.1.1 Blackworm Test

Two test endpoints were evaluated for the blackworm test: 10-day survival and 28-day biomass reduction. Because the results for both endpoints were replicated (i.e., n = 8 and n = 5, respectively), results for each OU-3 station and the pooled results for the three reference stations were compared using analysis of variance (ANOVA), followed by Dunnett's test. Normality and homogeneity of variances were evaluated based on analysis of residuals.

As shown in Table 5-1 and Figure 5-1, mean survival at 7 of the 10 OU-3 stations was very high (i.e., ≥89 percent) following the 10-day exposure to marsh sediments. By contrast, mean survival at the remaining three OU-3 stations ranged from 43 to 75 percent. Mean survival at the three reference stations ranged from 94 to 98 percent, with an overall mean value of

95.7 percent. Significant differences ($P \leq 0.05$) from the pooled reference results were found at the three OU-3 stations having mean survival values of 43 to 75 percent (i.e., Stations 13, 19, and 22), indicating the potential presence of lethal toxicity at those stations. These stations were located in the ADC/ARC/HRDD drainage, a small drainage west of the ARC/HRDD drainage, and on the HRDD.

Biomass reductions following the 28-day exposure to marsh sediments from the 10 OU-3 stations ranged from 0.6 g at Station 13A to 4.7 g at Station 12 (Table 5-1, Figure 5-2). Although biomass reductions at Stations 19 and 22 are presented in Table 5-1, those values were not used to characterize sublethal toxicity, because the relatively low levels of biomass reduction at those stations may have resulted from the significant ($P \leq 0.05$) lethal toxicity found at the two stations. That is, reductions in the number of test organisms because of mortality may have reduced crowding of the remaining organisms and allowed them to grow larger than they normally would have in the presence of the test sediments. The 28-day biomass reductions at the three reference stations ranged from 0.9 to 1.4 g, with an overall mean value of 1.2 g. Significant differences ($P \leq 0.05$) from the pooled reference results were found at 5 of the 10 OU-3 stations (i.e., Stations 12, 13, 14, 16, and 17), indicating the potential presence of sublethal toxicity at those five locations. With the exception of Station 14, these stations were located in the SPD/ARC drainage (Stations 12 and 16) or the ADC/ARC/HRDD drainage (Stations 13 and 17).

5.1.2 Earthworm Test

Three test endpoints were evaluated for the earthworm test: 14-day survival, 14-day biomass reduction, and 28-day biomass reduction. Because the 14-day results for survival and biomass reduction were replicated (i.e., n = 4), comparisons between each OU-3 station and the pooled results for the three reference stations were made using ANOVA, followed by Dunnett's test. Normality and homogeneity of variances were evaluated based on analysis of residuals. Because the results for the 28-day biomass reduction endpoint were not replicated for each OU-3 and reference station, the result for each OU-3 station was compared with the 95-percent upper confidence limit of the pooled reference results.

As shown in Table 5-1 and Figure 5-1, mean survival at all OU-3 stations was very high following the 14-day exposure to marsh sediments, with all values being ≥95 percent. Mean survival at all three reference stations was 100 percent. None of the values of mean survival at the OU-3 stations differed significantly ($P > 0.05$) from the pooled results for the reference stations. These results indicate that none of the marsh sediments were lethally toxic to earthworms.

Biomass reductions following the 14-day exposure to marsh sediments for most of the 10 OU-3 stations were less than or similar to the values found for the three reference stations, which ranged from −11.4 to 5.3 g, with an overall mean value of −4.5 g (Table 5-1). Only the mean value of 11.6 g found at Station 22 was significantly different ($P \leq 0.05$) from the pooled results for the three reference stations, indicating the potential presence of sublethal toxicity at that station.

Biomass reductions following the 28-day exposure to marsh sediments from the 10 OU-3 stations ranged from 9.1 g at Station 13 to 30.9 g at Station 17 (Table 5-1, Figure 5-3). The 28-day biomass reductions at the three reference stations ranged from 2.5 to 17.6 g, with an overall mean value of 10.4 g. Significant differences ($P \leq 0.05$) from the pooled reference results were found at 4 of the 10 OU-3 stations (i.e., Stations 12, 14, 17, and 19). With the exception of Station 14, these stations were located in drainages.

5.2 Site-Specific Sediment Quality Values

This section describes the development of site-specific SQVs for OU-3, as well as the use of those values to develop risk indices.

5.2.1 Development of Site-Specific Sediment Quality Values

Site-specific SQVs were developed to evaluate whether the various chemicals measured in OU-3 marsh sediments were present at concentrations that could potentially result in sediment toxicity. The site-specific SQVs were developed using the apparent effects threshold (AET) approach applied to the synoptic data collected on sediment toxicity and sediment chemical concentrations at the 10 stations distributed throughout the OU-3 marsh in 2004. Briefly, the AET for each chemical is the chemical concentration above which a specific kind of biological effect is always found in a particular database. AETs can be developed for any kind of biological indicator that has corresponding information on sediment chemical concentrations.

The AET approach was selected for use in the present study primarily because it is based on empirical site-specific information regarding the *absence* of biological effects and associated chemical concentrations. These characteristics are critical for evaluating sediment toxicity in areas where concentrations of multiple chemicals are elevated, and where concentrations of many of the chemicals covary. Approaches based on the *presence* of biological effects in association with chemical concentrations, such as the approaches used by Long and Morgan (1991), Long et al. (1995), Smith et al. (1996), and MacDonald et al. (1996) cannot distinguish which of the numerous covarying chemicals are actually responsible for any observed biological effects. Because the AET approach is based on no-effects data, it can identify the highest concentration of a particular chemical that does not result in adverse biological effects, regardless of the presence of covarying chemicals.

The EPA Science Advisory Board recognized the validity of the AET approach for establishing site-specific SQVs (U.S. EPA 1989). U.S. EPA (1997b) recently used AETs (in conjunction with other SQVs) to evaluate the potential toxicity of sediments from over 21,000 stations throughout the U.S. as part of the National Sediment Quality Survey. The AET approach has also been used by the Washington State Department of Ecology to develop promulgated state sediment quality standards for managing contaminated sediments in Puget Sound, Washington (Ecology 1995).

In the present study, site-specific AETs were developed for 18 target chemicals (i.e., 13 metals and 5 organic compounds) based on the information on sediment chemistry and toxicity that was collected at the 10 OU-3 stations in 2004. Chemical concentrations were screened against the following freshwater SQGs (in order of preference): the probable effect concentrations (PECs) of MacDonald et al. (2000), the effect range medians (ERMs) of Long and Morgan (1991), and the severe effect levels (SELs) of Persaud et al. (1993). Target chemicals were identified as those with sediment concentrations that exceeded these SQGs at one or more of the 10 stations sampled in the OU-3 marsh in 2004, or that exhibited substantial ranges among the 10 marsh stations. The results of the screening are presented in Table 5-2 and are summarized as follows:

- **Arsenic:** the PEC of 33 mg/kg was exceeded at 6 of the 10 OU-3 stations, with a maximum value of 17,800 mg/kg, which was more than 500 times as high as the PEC

- **Cadmium:** although the PEC of 4.98 mg/kg was not exceeded at any of the 10 OU-3 stations, cadmium concentrations at the 10 stations exhibited a wide range (i.e., 0.09 to 4.32 mg/kg)

- **Chromium:** the PEC of 111 mg/kg was exceeded at 4 of the 10 OU-3 stations, with a maximum value of 311 mg/kg, which was nearly 3 times as high as the PEC

- **Copper:** the PEC of 149 mg/kg was exceeded at 7 of the 10 OU-3 stations, with a maximum value of 1,240 mg/kg, which was more than 8 times as high as the PEC

- **Iron:** although no PEC or ERM exists for this chemical, the SEL of 40,000 mg/kg was exceeded at 4 of the 10 OU-3 stations, with a maximum value of 102,000 μg/kg, which was more than 2.5 times as high as the SEL

- **Lead:** the PEC of 128 mg/kg was exceeded at 9 of the 10 OU-3 stations, with a maximum value of 337 mg/kg, which was more than 2.5 times as high as the PEC

- **Magnesium:** although no SQGs exist for this chemical, magnesium concentrations at the 10 OU-3 stations exhibited a wide range (i.e., 283 to 6,080 mg/kg)

- **Manganese:** although no PEC or ERM exists for this chemical, the SEL of 1,100 mg/kg was exceeded at 1 of the 10 OU-3 stations and exhibited a wide range (i.e., 41.6 to 1,440 mg/kg)

- **Mercury:** the PEC of 1.06 mg/kg was exceeded at 7 of the 10 OU-3 stations, with a maximum value of 68 mg/kg, which was more than 60 times as high as the PEC

- **Nickel:** the PEC of 48.6 mg/kg was exceeded at 3 of the 10 OU-3 stations, with a maximum value of 76.7 mg/kg, which was more than 1.5 times as high as the PEC

- **Potassium:** although no SQGs exist for this chemical, potassium concentrations at the 10 OU-3 stations exhibited a wide range (i.e., <130 to 2,640 mg/kg)
- **Silver:** although no PEC exists for this chemical, the ERM of 2.2 mg/kg was exceeded at 9 of the 10 OU-3 stations, with a maximum value of 133 mg/kg, which was more than 60 times as high as the ERM
- **Zinc:** the PEC of 459 mg/kg was exceeded at 1 of the 10 OU-3 stations, by a value that only slightly exceeded the PEC (i.e., 477 mg/kg)
- 4,4′**-DDT:** the PEC of 62.9 μg/kg was exceeded at 4 of the 10 OU-3 stations, with a maximum value of 440 μg/kg, which was 7 times as high as the PEC
- γ**-Chlordane:** the PEC of 17.6 μg/kg was exceeded at 5 of the 10 OU-3 stations, with a maximum value of 790 μg/kg, which was more than 40 times as high as the PEC
- γ**-Hexachlorocyclohexane**: the PEC of 4.99 μg/kg was exceeded at 1 of the 10 OU-3 stations, by a value nearly 3 times as high as the PEC
- **Heptachlor epoxide**: the PEC of 16 μg/kg was exceeded at 2 of the 10 OU-3 stations, with a maximum value that was more than 2.5 times as high as the PEC
- **Total PCBs:** the PEC of 676 μg/kg was exceeded at 7 of the 10 OU-3 stations, with a maximum value of 20,000 μg/kg, which was nearly 30 times as high as the PEC.

For each chemical, AETs were developed for the five toxicity endpoints presented in Table 5-1. The use of these endpoints resulted in five kinds of AETs, two based on lethal effects (i.e., reduced survival), and three based on sublethal effects (i.e., reduced biomass).

The site-specific AETs developed for the present study are presented in Table 5-3, and the data matrices used to develop the AETs are presented in Table 5-4. As stated previously, the AET for each chemical/endpoint combination is the highest chemical concentration not associated with an adverse effect for that endpoint. As shown in Table 5-4, the five AETs for each chemical were determined by ranking the 10 OU-3 stations sampled in 2004 in descending order of sediment concentrations, and then determining the highest concentrations associated with no adverse effects (i.e., the AETs).

In general, the lethal AETs (i.e., those based on survival) were greater than the sublethal AETs (i.e., those based on biomass reduction). This pattern is generally expected because sublethal endpoints are typically more sensitive than lethal endpoints. In many cases, the lethal AETs were based on the highest chemical concentrations measured in the synoptic data set for OU-3, indicating that higher AETs may have been established if higher sediment chemical concentrations had been evaluated. For all 18 target chemicals, the lethal and sublethal AETs set by the blackworm test were equal to or lower than the corresponding AETs set by the earthworm test, indicating that the former test is generally more sensitive than the latter test.

5.2.2 Development of Risk Indices

The site-specific AETs described in the previous section were used to develop risk indices with which stations could be evaluated and prioritized with respect to risks to invertebrates. The first step in this process was to identify which of the five kinds of site-specific AETs to use for characterizing risk. To be conservative, the lowest AET (LAET) for each of the 18 target chemicals was selected (Table 5-5).

The next step in the development of risk indices was the selection of a method to identify the magnitude of individual risk posed by the 18 target chemicals evaluated at each OU-3 station, as well as the magnitude of combined risk posed by all 18 chemicals at each station. A mean SQG quotient approach was selected, using the LAETs presented in Table 5-4 as the SQGs. This approach has been used throughout the U.S. by numerous investigators to evaluate the potential risks posed by multiple covarying chemicals (Carr et al. 1996; Hyland et al. 2003; Fairey et al. 2001; Crane et al. 2002; Ingersoll et al. 2002; Long et al. 2006).

In the present study, AET quotients (or AETQs) were calculated for each of the 18 target chemicals at each OU-3 and reference station by dividing the station-specific chemical concentration by its respective LAET value. The mean of the 18 AETQs at each station was then used to provide an index of the overall risk posed by the 18 chemicals. This overall mean value for each station was termed the mean AETQ for the station. Table 5-6 provides the details of these calculations.

In addition to the mean AETQ for each station, the sum of the AETQs at each station was also calculated for comparison (Table 5-6). However, because all of the stations were represented by the same number of chemicals (i.e., 18), the relative rankings of the stations based on the mean and summed AETQs were identical. To be consistent with the approach currently used by others (e.g., Long et al. 2006), the mean AETQ was used as the index of risk at each station.

The toxicological relevance of the mean AETQs was evaluated by determining whether a concentration-response relationship existed between the mean AETQs and the sediment toxicity results found at the 13 OU-3 and reference stations sampled in 2004. Figures 5-4 and 5-5 show that such a relationship did exist between mean sublethal AETQs and 28-day biomass reduction in both the blackworm and earthworm tests. Significant positive correlations ($P \leq 0.05$) were found for both endpoints. These results indicate that the mean sublethal AETQs had toxicological significance with respect to predicting the presence of sublethal effects. Figures 5-4 and 5-5 also show that a mean AETQ of 1.0 appeared to be a critical value, above which sublethal toxicity significantly greater than the reference areas ($P \leq 0.05$) was found at all or most stations.

The AETQs, mean AETQs, and summed AETQs were also calculated for the 22 historical stations sampled in the OU-3 marsh, as presented in Table 5-7. This approach allows an evaluation of the potential for sediment toxicity at stations where chemical data but not sediment toxicity test data are available. As for the 2004 data, the mean and summed AETQs provided the same station rankings for the historical data.

The spatial distribution of mean AETQs for the 2004 and historical stations sampled within the OU-3 marsh is presented in Figure 5-6. In general, highly elevated mean AETQs (i.e., 5–10 and >10) were confined to the SPD/ADC and ADC/ARC/HRDD drainages and one station northwest of the HRDD. Stations in the northern part of the marsh and in the ARC/HRDD drainage generally exhibited very low potential (i.e., mean AETQs less than 1) for sediment toxicity. Other stations in the marsh exhibited low to moderate risk (i.e., mean AETQs between 1 and 49). Consistent with the discussion in Section 3.5, the location of most of the 2004 and historical sediment stations in drainage channels where contaminant concentrations are expected to be highest precludes the extrapolation of the station-specific analysis to the entire marsh or even to areas between drainage channels that were not sampled.

5.3 Uncertainty Assessment

The sediment toxicity analysis presented in this BERA conservatively assumes that the lethal and sublethal effects observed in the blackworm and earthworm tests were a function solely of chemical concentrations in marsh sediments. However, other factors may influence both survival and growth of these organisms in the test chambers and the field, such as the natural characteristics of the site sediments (e.g., moisture content, grain size distribution, TOC concentration, and quality). Because the marsh sediments in the study area are located in a transitional environment between true aquatic and true terrestrial environments, it is possible that their natural characteristics were not optimal for the aquatic blackworms and terrestrial earthworms used as test organisms in this study. The effects of such suboptimal conditions would most likely be manifested as sublethal effects (e.g., growth reductions) in the toxicity tests, rather than as lethal effects.

A second uncertainty associated with the sediment toxicity results is interpretation of the effects on individual organisms with respect to effects on populations of invertebrates in the field. For example, although the growth of individual organisms may be reduced, it is uncertain if growth reductions result in fewer offspring being produced, such that growth reductions would be manifested at the population level.

Variability can also contribute to uncertainty in interpretation of individual effects. Organisms display variability in their susceptibility to chemical stressors with some individuals affected at lower and some at higher concentrations than others.

Finally, while the toxicity tests evaluated both lethal and sublethal effects, they were not conducted over the entire life cycle of the organisms. For example, they did not assess potential effects on reproduction. Lack of information on such effects contributes to uncertainty when considering potential effects on invertebrate populations.

6 Assessment of Estuarine Fishes

The potential for risks to estuarine fishes was evaluated as part of the SLERA addendum (CDM 2002b) based on two methods: comparison of CoPC concentrations in water samples collected in 1999 with screening benchmarks, and comparison of CoPC concentrations in fish tissue with whole body residue effects levels. The evaluation of surface water concentrations indicated that copper was the only detected chemical where the maximum or mean concentration exceeded screening benchmarks. In the 1999 data set, copper concentrations in the Raritan River water samples ranged from 4.9–22.8 μg/L (mean = 8.6 μg/L). All samples exceeded the benchmark for estuarine fishes (2.4 μg/L). Surface water was not sampled as part of the 2004 supplemental field investigation, so no further comparison of water concentrations to screening benchmarks can be performed beyond that reported in the screening assessment. Although not reported in the screening assessment, copper was also measured at four reference area surface water stations as part of the 1999 sampling event. The copper concentration at all four locations (4.6–7.6 μg/L, mean = 6.2 μg/L) also exceeds the benchmark for estuarine fishes (2.4 μg/L). The mean concentration of copper in water adjacent to the Sites is similar to the mean concentrations for reference locations, suggesting that copper is not site-related.

The screening assessment also compared chemical concentrations in whole body fish samples from the Raritan River to effects-based scientific literature values for tissue concentrations, and determined that overall whole body residue levels were lower than concentrations reported to be associated with adverse effects levels. Fish tissue data for samples collected in 2004 support this determination, as the maximum concentrations of most CoPCs were below the lowest reported literature thresholds for adverse effects (Table 6-1). The tissue residue levels in Table 6-1 were originally compiled in the SLERA addendum (CDM 2002b) from Jarvinen and Ankley (1999).

For inorganic analytes, only aluminum in fish from both the river portion of OU-3 and the reference area occurred at maximum and mean concentrations exceeding the lowest corresponding adverse effect level reported in the screening assessment (CDM 2002b). Maximum concentrations of mercury and selenium in fish from OU-3 just exceeded the lowest corresponding threshold, while maximum concentrations of lead were about 1.5-fold above the lowest threshold, but less than other literature-based effect concentrations reported by CDM (2002b). Silver concentrations in fish from both OU-3 and the reference area slightly exceeded the highest no-effect threshold reported by CDM (2002b), but because no corresponding adverse-effect threshold was available, this does not indicate that adverse effects resulting from silver would be expected.

For pesticides, PCBs, and PCDD/Fs (expressed as TEQs in Table 6-1), all observed values were well below the minimum threshold for effects, as provided in the SLERA addendum (CDM 2002b). For example, the maximum detected PCB concentration in fish tissue was 810 μg/kg, which is less than 1 mg/kg and several orders of magnitude below the screening value of 161,000 μg/kg. No tissue residue level for chlordane was presented in the SLERA addendum. However, Eisler (1990) presents a no observed effect level for total chlordane of < 0.1 mg/kg fish tissue for protection of fish. The maximum values for α-chlordane and γ-chlordane in fish tissue samples from the site (4 and 11 μg/kg, respectively) are well below this value.

Overall, the evaluations presented in the screening assessment indicate that there is a very low likelihood of adverse effects to estuarine fishes from exposure to CoPCs in surface waters of the Raritan River. This conclusion is supported by fish tissue data collected as part of the 2004 supplemental investigation, which indicates that CoPC concentrations are below potential adverse effect levels.

7 Wildlife Assessment

Food-web exposure models were developed to estimate site-specific daily doses of CoPCs for avian and mammalian receptors. This approach allowed for a direct comparison of exposure rates with measures of toxicity. The ratio of an exposure estimate to an ecotoxicity value, such as a TRV, is known as a hazard quotient (U.S. EPA 1997a). Deterministic exposure models are used to describe a single representative exposure scenario for a receptor and CoPC combination at a given location, such as the daily exposure to PCBs for a red-tailed hawk feeding in the marsh, calculated using point estimates for each exposure variable. Exposure variables in food-web models include receptor-specific parameters such as body weight, food and sediment ingestion rates, dietary composition, and area use factor, as well as site-specific CoPC concentrations in dietary components and inert media (U.S. EPA 1997a).

Hazard quotients developed as single-point exposure and effects comparisons are useful for identifying potential low- or high-risk situations (63 Fed Reg. 26845–26924). U.S. EPA (1999) recommends using a point-estimate approach as a first step in risk characterization. Therefore, deterministic exposure models were developed for all wildlife receptors, as described in the exposure assessment (Section 7.1). Wildlife exposure estimates were then compared with TRVs derived from toxicological studies reported in the scientific literature; TRV derivations are discussed briefly in the ecological effects assessment (Section 7.2), and hazard quotient results are reported and interpreted in the risk characterization (Section 7.3). The Uncertainty Assessment is presented in Section 7.4.

7.1 Exposure Assessment

Food-web models similar to those described in EPA's guidance for deriving ecological soil screening levels (Figure 4-1 of U.S. EPA 2003) were used to calculate exposure for use in a hazard quotient approach to characterize risk. The following is the general form of the food-web model for estimating exposure of wildlife receptors to CoPCs:

$$HQ_j = \frac{\left(\left[\mathrm{Sediment}_j \times P_i \times FIR \times AF_{js}\right] + \left[\sum_{i=1}^{N} B_i \times P_i \times FIR \times AF_{ji}\right]\right) \times AUF}{TRV_j}$$

where:

HQ	=	hazard quotient for contaminant (j) (unitless)
$\mathrm{Sediment}_j$	=	contaminant concentration for contaminant (j) in sediment (mg/kg dry weight)
N	=	number of different biota types in diet
B_i	=	contaminant concentration in biota type (i) (mg/kg wet weight)

P_i	=	proportion of biota type (i) in diet
FIR	=	food ingestion rate (kg food [wet weight]/kg BW [wet weight]/day)
AF_{ji}	=	absorbed fraction of contaminant (j) from biota type (i)
AF_{js}	=	absorbed fraction of contaminant (j) from sediment (s)
TRV_j	=	the no-observed-adverse-effect dose or lowest-observed-adverse-effect dose (mg/kg BW day)
P_s	=	sediment ingestion as proportion of diet (expressed on a dry weight basis)
AUF	=	area use factor.

Receptor-specific food-web models were developed to estimate daily dietary exposures to CoPCs for birds and mammals that may feed in the marsh or river, including invertivores (represented by the short-tailed shrew and marsh wren), herbivores (represented by the muskrat), carnivores (represented by the red-tailed hawk), piscivores (represented by the osprey), and omnivores (represented by the herring gull). The shrew, wren, muskrat, and hawk were modeled as marsh receptors, while the osprey and herring gull were modeled as receptors foraging in the Raritan River. OU-3 and reference scenarios were evaluated for each receptor.

7.1.1 Concentrations of Chemicals of Potential Concern

Measured CoPC concentrations in tissue and surface sediment samples collected during the supplemental field investigation in 2004 were used to estimate chemical exposures from food and incidental sediment ingestion. These data were collected specifically to support the BERA and the feasibility study, they more accurately represent current conditions at OU-3 than older data sets, and they provide matched sediment and prey data for use in location-specific food-web models for shrews and wrens. Field data used in the exposure calculations are summarized by receptor in Table 7-1. The field replicates, PCB and PAH sums, and TEQ calculations for PCDD/Fs were handled as described in Section 3.3.

For receptors with small home ranges (i.e., shrew and wren), the available data including undetected results were used to estimate dietary exposures on a station-by-station basis. If a chemical concentration was undetected in sediment or food at a given station, a value of one-half of the detection limit was used to estimate the exposure point concentration. For receptors that forage across a broader area (e.g., muskrat, hawk, gull, osprey), dietary exposures were estimated slightly differently. For these receptors, the mean detected concentrations in sediment and food were used to calculate exposure. As long as there was at least one detected result for a given chemical in sediment or food, only the detected data were used to calculate the mean exposure concentration. However, if all values were undetected, the mean exposure concentration was estimated as one-half of the maximum detection limit. This approach is considered conservative because it does not include values that are below the detection limit at some stations whenever there is a detectable concentration at other stations.

7.1.2 Exposure Parameters

Table 7-2 summarizes the exposure parameters used in the food-web models, including receptors' body weights, food ingestion rates, sediment ingestion rates, diet compositions, and area use factors. Conservative but ecologically relevant exposure parameters were selected from EPA's *Wildlife Exposure Factors Handbook* (U.S. EPA 1993) or other literature sources. Typically, mean adult female body weights were selected for use in the exposure models. Food ingestion rates were estimated from measured food consumption rates or energy budgets reported in the literature, or were calculated using allometric equations from Nagy et al. (1999) and site-specific moisture contents of food items. Because most chemical concentrations in tissues were reported on a wet weight basis by the analytical laboratory, food CoPC concentrations and food ingestion rates were also expressed on a wet weight basis in the models. Incidental sediment ingestion rates were based on the percentage of soil in wildlife diets (on a dry weight basis) reported in Beyer et al. (1994). Because sediment chemistry data were reported on a dry weight basis by the analytical laboratory, sediment CoPC concentrations and sediment ingestion rates were also expressed on a dry weight basis in the food-web models. In the absence of data on relative gastrointestinal absorption efficiencies, the absorbed fractions of biota and sediment were conservatively set to a value of 1.0 in all models.

For modeling purposes, diet compositions were simplified to one or two primary food items collected during the supplemental field investigation. The muskrat, red-tailed hawk, and osprey were assumed to eat 100 percent *Phragmites*, small mammals, and forage fish, respectively (Table 7-2). Based on their different feeding habits, the short-tailed shrew and marsh wren were assumed to consume diets with varying proportions of terrestrial invertebrates and worms. The shrew's diet was weighted more heavily on earthworms than on other terrestrial invertebrates, whereas the wren's diet was weighted more heavily on terrestrial invertebrates than on aquatic worms (i.e., blackworms). The herring gull was assumed to forage equally on crabs and fish. In a few scenarios where data were available for only one of the two relevant prey items, ingestion of the analyzed prey tissue was assumed to represent the entire chemical contribution in food (i.e., diet composition was adjusted to 100 percent of the food item for which data were available). For example, blackworms represented 10 percent of the marsh wren's diet in the food-web models (Table 7-2), but blackworm data were not available for Station 12 because there was insufficient mass for chemical analysis. Consequently, exposure calculations for marsh wren at Station 12 were performed assuming a diet of 100 percent terrestrial invertebrates rather than 90 percent invertebrates and 10 percent blackworms. Similarly, blackworms exposed to sediment from Station 14 had insufficient mass for pesticide or PCB analyses, and, therefore, the wren's estimated exposures to these chemicals at Station 14 were also derived based on a diet of terrestrial invertebrates. Exposures to other chemicals at this station, however, were estimated using the available blackworm and terrestrial invertebrate data.

Some dietary substitutions were also performed in food-web models for the short-tailed shrew and herring gull. For instance, SVOCs were not analyzed in terrestrial invertebrate samples. Therefore, in food-web exposure models for SVOCs, earthworm data were used to represent 100 percent of the shrew's food intake. Conversely, earthworms exposed to sediment from Station 17 were not analyzed for pesticides or PCBs because there was insufficient sample mass. Therefore, shrews at this location were modeled for exposure to pesticides and PCBs using insect data only. Because aboveground insects do not accumulate pesticides or PCBs to the same extent as earthworms, this is likely to result in an under-estimation of risk to shrews at this location if earthworms are part of their diet. Fish tissue concentrations were used to estimate reference exposures to SVOCs, pesticides, and PCBs for the herring gull, because crab samples from the reference area were not analyzed for these chemicals.

In some cases, no dietary substitutions could be made and, therefore, some CoPCs were not evaluated in exposure models. For example, as per the approved work plan (Exponent 2004), PCDDs/Fs were not analyzed in earthworm, blackworm, or insect tissue. Therefore, the risk from these compounds to invertivorous receptors (shrew and wren) could not be evaluated. However, the SLERA addendum (CDM 2002b) did not identify PCDD/Fs as a primary contributor to risk in the marsh, and the purpose of PCDD/F analysis in the 2004 supplemental field investigation was to ascertain the potential extent of contamination in the marsh, rather than to include PCDD/Fs in marsh food-web models.

Area use factors were derived for receptors with home ranges larger than the marsh or river portions of OU-3, including the red-tailed hawk, osprey, and herring gull. These receptors would be expected to forage not only at OU-3, but also at other locations, and would likely derive a substantial portion of their diets from offsite areas. Thus, the area use factor is the fraction of the home range that the marsh or river portion of OU-3 represents for a given receptor. Area use factors were applied to exposure calculations for the marsh and river habitats at OU-3 but were not applied to reference exposure calculations. No area use factors were applied to exposure estimates for the shrew, wren, or muskrat, all of which could potentially have foraging ranges occurring entirely within the marsh.

7.1.3 Modeling Approach

Daily dietary exposures were modeled on a scale appropriate to the life history of each receptor. For the short-tailed shrew and the marsh wren, whose home ranges (<0.5 ha) are smaller than the marsh (approximately 2.4 ha), individual food-web models were developed for each sampling station in the marsh and reference area where appropriate prey tissue data were collected in 2004. OU-3 stations included Stations 11a, 12, 13, 13a, 14, 16, 17, 18a, 19, and 22, and reference stations included Stations TERRREF1, TERRREF2, and TERRREF 3 (station locations are shown in Figure 3-1). Given their small home ranges, these receptors would be exposed to localized CoPC concentrations in the marsh and would not be expected to forage across stations. Four of the OU-3 stations (11A, 13A, 18A, and 22) were located on higher ground on the fringes of the marsh (Figure 3-1), but these were treated as marsh stations and included in the analysis.

Separate marsh-wide evaluations were also conducted for shrews and wrens using mean prey tissue and sediment data from all OU-3 marsh stations, to generate risk estimates for a hypothetical invertivorous receptor that forages across the entire marsh. These evaluations are considered less realistic because individual short-tailed shrews and marsh wrens do not forage across an area as great as the marsh. In addition, interpretation of these evaluations is hindered by the lack of representative sampling in all areas of the marsh. As discussed in Section 3.5, the marsh sampling stations were primarily located in drainage channels where contaminant concentrations are expected to be the highest.

In general, co-located prey and surface sediment data collected in 2004 were used in the station-specific models for the shrew and the wren. However, in the case of terrestrial invertebrates (a food item for the shrew and wren), the sample mass collected at OU-3 and the reference area in 2004 was only sufficient to form one composite sample representing the whole marsh and one composite sample representing the reference area, respectively. Because data from only one OU-3 sample and one reference sample were available for use in the food-web models, the concentrations measured in the one OU-3 sample were used in all shrew and wren models for marsh stations, and analogously, the concentrations measured in the one reference sample were used in all the reference models. Because terrestrial invertebrates represented a smaller fraction of the shrew's diet (25 percent) than the wren's diet (90 percent), the exposure estimates for the shrew were more closely related to station-specific prey tissue concentrations than the exposure estimates for the wren. Sediment concentration inputs in the models, however, were always specific to the station under evaluation, except for the marsh-wide evaluation, which used mean sediment concentrations, as noted above.

For receptors with large home ranges, including the red-tailed hawk, osprey, and herring gull, mean CoPC concentrations in prey tissue and sediment were calculated for the marsh or river portion of OU-3, in order to integrate potential chemical exposures across OU-3. Likewise, mean tissue and sediment concentrations were calculated for the marsh and river reference areas. Exposure for the muskrat, which has an intermediate-sized home range and could potentially forage across the whole marsh, was also estimated using mean plant tissue and mean sediment concentrations, following a similar approach to the hawk, osprey, and gull models.

7.2 Ecological Effects Assessment

The goal of the ecological effects or toxicity assessment is to determine the toxic effects of contaminants on selected ecological receptors. In particular, the effects assessment links potential contaminant exposure-point concentrations to potential adverse effects in selected ecological receptors. TRVs for birds and mammals were compiled from the literature and compared with exposure estimates for wildlife receptors to assess the potential for adverse effects, as described below in the Risk Characterization.

When available, both NOAELs and lowest-observed-adverse-effect levels (LOAELs) were used to describe the potential for adverse ecological effects to occur as a result of CoPC exposure. The NOAEL represents a body-weight-normalized daily intake rate of a chemical that did not elicit any adverse responses in the test organism. An exceedance of this value does not necessarily imply that adverse effects would occur for ecological receptors. However, if daily dietary exposures are lower than the NOAEL TRV, then the chemical is not considered likely to cause adverse effects to wildlife receptors. The LOAEL is the minimum dose reported to elicit a statistically significant adverse effect in the species tested in the pertinent laboratory study. Thus, an exposure rate in excess of the LOAEL TRV may result in an adverse effect to an exposed individual or population.

The selection of TRVs requires the use of professional judgment in combination with guidelines provided in EPA's ERA guidance documents (U.S. EPA 1997a). Because the intent of an ERA is to assess risks to wildlife populations, laboratory studies reviewed for TRV derivation were evaluated for the measurement endpoints that are relevant for receptors on a population level: development, reproduction, and survival. Chronic dietary exposure studies were preferred, because they best represent wildlife exposure conditions to CoPCs at OU-3. For some chemicals with little or no published toxicological information, studies measuring alternate endpoints or with shorter exposure durations had to be used for TRV derivation. For these chemicals, TRVs used in the SLERA addendum (CDM 2002b) were also adopted for use in the BERA, or alternatively, if no TRV could be derived, risks to wildlife from exposure to these chemicals could not be evaluated. Table 7-3 summarizes the avian and mammalian TRVs that were used in baseline risk calculations.

7.3 Risk Characterization

To assess the potential for adverse ecological effects to bird and mammal populations, the exposure and effects assessments for wildlife were integrated using the hazard quotient approach. For every food-web exposure model scenario, the daily dietary exposure to a CoPC was compared against the relevant NOAEL and LOAEL TRVs (if available; Table 7-3). Estimated daily exposures in reference areas were compared against the same TRVs to assess the ecological risks to receptors from exposure to regional background chemical concentrations and to provide a context for evaluating incremental risks to receptors that are exposed to potentially elevated chemical concentrations at OU-3.

Hazard quotient results for wildlife receptors are presented in the following subsections. The results are summarized by environment and ecological receptor. The focus of the toxicity assessment is on receptor and chemical combinations for which hazard quotients suggest the potential for adverse ecological effects (i.e., hazard quotients were greater than 1.0). The majority of receptor and chemical combinations evaluated in the risk assessment had NOAEL-based hazard quotients below 1.0, indicating a low likelihood of adverse ecological effects.

Complete food-web exposure models showing all hazard quotient results are presented in Appendix F. Tables with an "a" designation (e.g., Table F-6a) show example exposure point concentration calculations for media and prey for each of the receptors at site and reference stations.

7.3.1 Marsh Receptors

Ecological risks were evaluated for four receptors (short-tailed shrew, muskrat, red-tailed hawk, and marsh wren) representing birds and mammals that may be exposed to site-related chemicals while foraging in the marsh. As described above in the exposure assessment, risks to the shrew and wren were evaluated on a station-by-station basis, while risks to the muskrat and hawk were integrated across the marsh or reference area. Hazard quotient results for marsh receptors are discussed in the subsections below.

7.3.1.1 Short-tailed Shrew

The short-tailed shrew represents invertivorous mammals that may feed on earthworms and other terrestrial invertebrates in the marsh. Food-web models for the shrew estimated daily dietary exposures to SVOCs, pesticides, PCBs, and metals. Exposures to SVOCs could be evaluated only at Station 13 in the marsh and Stations TERRREF1 and TERRREF3 in the reference area (Figure 3-1), because invertebrate tissue data for these compounds were not available for the other marsh stations. The marsh-wide evaluation used Station 13 SVOC data to represent the entire marsh.

Based on the station-specific evaluations, two SVOCs (hexachlorobenzene and hexachloro-cyclopentadiene), two pesticides (4,4′-DDT and γ-chlordane), total PCBs, and eleven metals (aluminum, arsenic, chromium, cobalt, copper, iron, lead, mercury, selenium, silver, and vanadium) had hazard quotients above 1.0 at one or more OU-3 stations (Table 7-4 and Figure 7-1). All aluminum and arsenic exposures were higher than the LOAEL TRVs (hazard quotients of 16–48 and 1.6–370, respectively), and maximum exposures to PCBs, copper, mercury, and vanadium were higher than the LOAEL TRVs (Table 7-4). Estimated exposures to cobalt, chromium, lead, and selenium were less than or equal to the LOAEL TRVs and thus would be unlikely to cause adverse effects to shrews. LOAEL TRVs were not derived for SVOCs, pesticides, iron, or silver. However, exposures to 4,4′-DDT, γ-chlordane, and silver exceeded the NOAEL TRVs at only one out of ten marsh stations (Figure 7-1), with relatively low hazard quotients (1.4, 3.1, and 1.5, respectively), suggesting that exposures to these CoPCs are not likely to affect invertivorous mammal populations, but could have adverse effects in individuals at localized areas of the marsh. Similarly, the hazard quotient of 1.1 for hexachlorobenzene, which was evaluated for only one OU-3 station (Station 13; Figure 7-1), suggests a low potential for adverse ecological effects. The NOAEL exceedances for hexachlorocyclopentadiene at Station 13 and reference stations (Table 7-4) appear to be artifacts of high detection limits for earthworm samples (hexachlorocyclopentadiene was undetected in all marsh sediment and earthworm samples from 2004).

As would be expected, results of the marsh-wide evaluation show risk levels intermediate to the range generated by station-specific evaluations (Table 7-5). Of the CoPCs that had at least one station-specific hazard quotient above 1.0, all these except 4,4′-DDT, γ-chlordane, lead, and silver had NOAEL-based hazard quotients greater than 1.0. Total PCBs, aluminum, arsenic, copper, and mercury also had LOAEL-based hazard quotients greater than 1.0.

In addition to hexachlorocyclopentadiene, PCBs and seven metals (aluminum, arsenic, cobalt, copper, iron, mercury, selenium, and vanadium) had hazard quotients above 1.0 at reference stations (Table 7-4). Aluminum and arsenic exposures were higher than the LOAEL TRVs at all reference stations (hazard quotients of 13–35 and 2.0–2.9, respectively; Table 7-4). In general, aluminum hazard quotients at the reference area were comparable to hazard quotients in the marsh (Table 7-4); therefore, little incremental risk to shrews from aluminum exposure at the marsh is suggested as compared to the reference area. Cobalt, iron, lead, selenium, and vanadium also had similar NOAEL- or LOAEL-based hazard quotient ranges at the marsh and reference area (less than 2-fold difference, on average). In contrast, arsenic exposures were 20-fold higher in the marsh than in the reference area, on average, and the maximum LOAEL-based hazard quotient for arsenic in the marsh (370 at Station 17) was more than two orders of magnitude higher than the maximum hazard quotient in the reference area (2.9 at Station TERRREF2).

The food-web model results for shrew suggest that arsenic, mercury, PCBs, and possibly copper are the primary drivers of ecological risk to invertivorous mammals in the marsh. Estimated exposures to these CoPCs were higher than the NOAEL TRVs at all marsh stations, higher than the LOAEL TRVs at most marsh stations (all stations for arsenic), and generally higher than reference exposures (Table 7-4). However, as shown in Figure 7-1, the magnitude of hazard quotients was heterogeneous across the marsh. For example, arsenic LOAEL-based hazard quotients ranged from 41 to 370 at Stations 12, 16, and 17 in the SPD/APC and SDC/ARC/HRDD drainages, but were much lower at all other locations, with hazard quotients ranging between 1.6 and 5.0. Results for mercury and PCBs generally mirrored the arsenic results. The highest mercury hazard quotients occurred at Stations 16 and 17, and Stations 12 and 16 had LOAEL-based hazard quotients above 1.0 for PCBs, although the highest hazard quotient was at Station 22, located on the edge of the HRDD. LOAEL-based hazard quotients for copper ranged from 0.87 to 3.9, with the highest exceedances for this CoPC occurring at Stations 14 and 19. Thus, shrews foraging at locations across the marsh may be exposed to elevated concentrations of a limited number of CoPCs that could affect their development or reproductive performance, although results indicate that the likelihood of possible effects is higher in some areas than others.

7.3.1.2 Muskrat

The muskrat represents herbivorous mammals that may feed on marsh vegetation such as *Phragmites* roots and stems. Food-web models for the muskrat included exposure calculations for SVOCs, pesticides, PCBs, and metals. NOAEL-based hazard quotients for seven metals (aluminum, arsenic, chromium, copper, iron, mercury, and vanadium) exceeded 1.0 in the marsh, but no other CoPCs had hazard quotients greater than 1.0 for muskrat (Table 7-6). Of the seven CoPCs that failed the TRV comparisons, only aluminum, arsenic, and mercury had LOAEL-based hazard quotients above 1.0 (hazard quotients of 8.6, 5.9, and 1.5, respectively).

Hazard quotients for aluminum, arsenic, iron, and vanadium also exceeded 1.0 in the reference area (Table 7-6). The LOAEL-based hazard quotient for aluminum was 7.5, only slightly lower than the hazard quotient for aluminum in the marsh (8.6), indicating that there is little incremental exposure to aluminum when muskrats forage in the marsh as compared to the reference area. Iron exposure in the marsh was twice the reference exposure, although both exposure estimates were higher than the NOAEL TRV for iron. This no-effects TRV was extrapolated from a single-dose LD50, to which a 50-fold uncertainty factor was applied (CDM 2002b), however, and is therefore highly uncertain. Iron is naturally present in relatively high concentrations in the environment and is not typically a risk-driving chemical in ERAs. Vanadium exposure was higher in the reference area than in the marsh (Table 7-6) and therefore poses no incremental risk to the muskrat.

Based on the hazard quotient results for muskrat, arsenic and mercury appear to be the primary chemicals of concern for herbivorous mammals. Both chemicals had LOAEL-based hazard quotients above 1.0 in the marsh, and OU-3 hazard quotients were an order of magnitude higher than reference hazard quotients for both chemicals (Table 7-6). Therefore, exposures to arsenic and mercury in the marsh may result in adverse effects to herbivorous mammals.

7.3.1.3 Red-tailed Hawk

The red-tailed hawk represents carnivorous birds that may prey on small mammals in the marsh. Food-web models developed for the hawk evaluated exposures to SVOCs, pesticides, PCBs, and metals. No hazard quotients for the hawk exceeded 1.0 in the marsh or reference area. The results suggest that dietary exposure to CoPCs is very unlikely to result in adverse ecological effects to carnivorous birds that forage in the marsh.

7.3.1.4 Marsh Wren

The marsh wren represents invertivorous birds that may feed on terrestrial or aquatic invertebrates in the marsh portion of OU-3. Food-web models for the wren estimated daily dietary exposures to pesticides, PCBs, and metals. Based on station-specific evaluations, exposures to PCBs and six metals (aluminum, arsenic, chromium, copper, lead, and mercury) exceeded the NOAEL TRVs at one or more marsh stations (Table 7-7 and Figure 7-2). Aluminum, chromium, and mercury exposures at all marsh stations were higher than the NOAEL TRVs, whereas exposure to PCBs exceeded the NOAEL TRV at only one station (hazard quotient of 3.9 at Station 22; Figure 7-2). Exposures to arsenic, chromium, copper, and mercury also exceeded the LOAEL TRVs. Lead and total PCB exposures did not exceed LOAEL TRVs at any marsh stations, and therefore would not be expected to cause adverse effects to invertivorous birds. No other CoPCs had hazard quotients greater than 1.0 for the marsh wren. Results of the marsh-wide evaluation are comparable to station-specific results, except that PCB exposure did not exceed the NOAEL TRV, and copper exposure did not exceed the LOAEL TRV.

Daily exposures to aluminum, chromium, lead, and mercury also exceeded the NOAEL TRVs at reference stations, and the maximum mercury exposure in the reference area exceeded the LOAEL TRV (hazard quotient of 2.4; Table 7-7). In general, hazard quotients for aluminum and lead were comparable in the marsh and reference area (less than 2-fold difference, on average), whereas hazard quotients for arsenic, mercury, and PCBs were typically an order of magnitude higher in the marsh, and hazard quotients for chromium and copper were 2- to 3-fold higher in the marsh (Table 7-7).

The food-web model results suggest that mercury is the primary risk driver for invertivorous birds in the marsh. The magnitude of hazard quotients was heterogeneous across the marsh, however, with highest values at Stations 12, 16, 17, 19, and 22 in the SPD/ADC and ADC/ARC/HRDD drainages and at the edge of the HRDD (Figure 7-2). Generally lower values were observed elsewhere (Figure 7-2). Arsenic and chromium are also potential risk drivers for invertivorous birds at stations that largely correspond to the stations identified for mercury. Thus, wrens foraging at some locations across the marsh may be exposed to elevated concentrations of a limited number of CoPCs that could affect their development or reproductive performance.

7.3.2 River Receptors

Ecological risks were evaluated for two receptors (osprey and herring gull) representing piscivorous and omnivorous wildlife that may be exposed to site-related chemicals in the Raritan River. Hazard quotient results for the river receptors are discussed in the following subsections.

7.3.2.1 Osprey

The osprey represents estuarine birds that feed predominantly on fish, including forage fish from the Raritan River. Food-web models for osprey estimated exposures to SVOCs (2-methyl-4,6-dinitrophenol, bis[2-ethylhexyl]phthalate, and PAHs), pesticides, PCBs, PCDD/Fs, and metals. No hazard quotients for the osprey exceeded 1.0 in the river portion of OU-3 or in the reference area. The results suggest that dietary exposure to CoPCs is very unlikely to result in adverse ecological effects to piscivorous birds that forage at OU-3.

7.3.2.2 Herring Gull

The herring gull represents estuarine birds that consume a varied diet from the river system. The herring gull's diet was approximated as 50 percent crabs and 50 percent fish in the food-web models. Herring gull exposure models were developed to evaluate the same suite of chemicals as the osprey models, including exposures to SVOCs (2-methyl-4,6-dinitrophenol, bis[2-ethylhexyl]phthalate, and PAHs), pesticides, PCBs, PCDD/Fs, and metals. No hazard quotients for the gull exceeded 1.0 in the river portion of OU-3 or in the reference area. The hazard quotient results for herring gull corroborate the findings for osprey and indicate that CoPC exposure is very unlikely to cause adverse effects to gulls or other birds that forage in the river.

7.3.3 Incorporation of Historical Analytical Chemistry Data

As noted in Section 7.1.1, the results of the food-web model exposure assessment presented above were based on measured CoPC concentrations in tissue and surface sediment samples collected during the supplemental field investigation in 2004, as these data best represent current conditions in the marsh and river at OU-3. However, to evaluate whether risk estimates would be different if historical data were included, a second exposure evaluation was performed using the mean CoPC concentrations for the combined 1997/1999 and 2004 data sets.

Combined mean CoPC concentrations for the marsh sediment were used in food-web models for short-tailed shrew, marsh wren, muskrat, and red-tailed hawk. Because no appropriate prey tissue data were collected in historical sampling, CoPC concentrations in food were based on 2004 data only. Additionally, only marsh-wide risk estimates were calculated for shrew and wren because of the inability to pair 2004 stations with prey data to historical sediment data.

Incorporation of historical marsh sediment data had no bearing on risk estimates. The same 12 chemicals with LOAEL and/or NOAEL hazard quotients greater than 1.0 for marsh wren based on the 2004 marsh-wide evaluation (Table 7-5) also had hazard quotients greater than 1.0

when historical sediment data were incorporated, as shown in Table 7-8. Likewise for wrens, the same pattern of exceedances seen with 2004 data (Table 7-9) occurred when historical sediment data were included, as shown in Table 7-10. For muskrat, the same seven metals with TRV exceedances based on 2004 data (Table 7-5) still exceeded using the combined data set. No hazard quotients for red-tailed hawk exceeded 1.0 using the combined data set, consistent with results obtained using 2004 data only.

For receptors foraging in the river (osprey and herring gull), historical sediment data were combined with data collected in 2004 to estimate overall mean CoPC concentrations. Additionally, for osprey, historical fish tissue CoPC data (for VOCs, pesticides/PCBs, and inorganic analytes only) were combined with data for fish sampled in 2004. Consistent with the results based on 2004 data only, results based on the combined data set indicated that no hazard quotients for the gull or osprey (Table 7-11) exceeded 1.0 for any CoPC in the river portion of OU-3.

Inclusion of historical sediment and prey tissue chemistry data resulted in no differences in the suite of receptor-CoPC combinations with hazard quotients greater than 1.0, when compared to hazard quotients calculated based on 2004 data only. Therefore, risk characterization conclusions reported above using only 2004 data are robust and predictive of current and historical risk to receptors in the marsh and river, albeit with the caveat that marsh station locations were primarily located in drainage channels where contaminant concentrations are expected to be the highest.

7.4 Uncertainty Assessment

There are a number of inherent uncertainties associated with any risk assessment. Uncertainties can exist with regard to the characterization of CoPC concentrations in site media and biota, or with the interpretation of the ecological significance of those CoPC concentrations on receptor populations. This section presents an evaluation of most important sources of uncertainty related to the wildlife assessment and the effects of these uncertainties on conclusions regarding the extent and magnitude of risks to avian and mammalian receptors.

The risk characterization for wildlife is based on a model that is intended to predict the response of a population of wildlife receptors as the result of the presence of a number of potential toxicants (i.e., the CoPCs) in a particular location, at a particular concentration, at a particular time. Through the development of either discrete station or marsh- and river-wide risk scenarios, the risk characterization takes into account the distribution of CoPCs at OU-3 and combines this information with estimated values for key life history parameters of the receptors and predicted physiological responses to CoPC exposure, to provide a measure of the likelihood that the conditions, as understood, will affect receptor population demography. The risk assessment is, however, only a model of reality. By virtue of incomplete knowledge about receptor ecology and toxicology, models must generalize over conditions, assume events and responses, and disregard factors and conditions based on the presumption that such factors are inconsequential. Best professional judgment is applied to ensure that while the models do not significantly underestimate potential risks, they do not become so conservative as to render the results meaningless. The specific uncertainties associated with the risk assessment for wildlife are identified and discussed in the following sections.

7.4.1 Wildlife Exposure Estimates

Exposure estimates for wildlife receptors were based on a deterministic model that incorporated site-specific data on CoPC concentrations with assumptions about the life history characteristics of the receptor species. Almost all of the model input values have associated probability distributions; however, selection of determinate values for exposure characterizations was based on the best available information for the average individual. For receptors with a foraging range equivalent to, or larger than, the marsh (i.e., muskrat and red-tailed hawk) or adjacent river reach (i.e., osprey and herring gull), mean CoPC concentrations in food and sediment were used as input values to the exposure models. This approach provides a representative exposure estimate for receptors that are equally likely to be exposed to prey and media at any location within the marsh or river during the time they spend foraging at these locations. Point values were used for station-based estimates for small-home-range receptors (i.e., shrews and wrens), because individuals of these species are reasonably expected to have different exposure scenarios depending on the location of their home range or foraging area within the marsh.

Exposure via water consumption was not included in the models. The majority of CoPCs other than some metals were undetected in water, and furthermore, the water exposure pathway typically contributes a very minor percentage of the total exposure to CoPCs relative to contributions from food and sediment ingestion. Additionally, receptors often satisfy water requirements from moisture in prey or metabolic water. Therefore, the exclusion of the water exposure pathway may result in a very small underestimation of the total exposure, but this has no bearing on the risk conclusions presented in this BERA.

In the absence of site-specific information on parameters such as body weights, prey selection, and ingestion rates, information was obtained from literature sources. Uncertainty is inherent in all the assumptions used to estimate the exposure of receptors to CoPCs. However, these assumptions are as ecologically accurate and realistic as possible. Where uncertainty was identified, values were selected that would tend to maximize exposure or effect and therefore would be conservative in the estimation of risk. Below is a detailed discussion on specific sources of potential uncertainty that have been identified in the food-web exposure models.

7.4.1.1 Body Masses and Intake Rate Parameters

Body mass estimates were based on values reported in the scientific literature, with a focus when possible on mean female masses from New Jersey or other regions of northeastern North America. Female body masses are used because many of the endpoints used to establish NOAELs or LOAELs relate to reproductive parameters. Therefore, female exposure to CoPCs is important when predicting if population effects are likely to occur. For some receptors, average male body mass may be higher than that of females, but food ingestion rates scale with body weight, and because heavier organisms tend to eat proportionally less per unit mass, use of female data is not considered to underestimate effects to males. Food intake rates were published observations summarized in U.S. EPA (1993) or were calculated from mean body masses using allometric equations from Nagy et al. (1999). Thus, food-web exposure model results were representative of the average individual in a receptor's population and would tend to overestimate exposure for larger than average individuals and to underestimate exposure for smaller than average individuals.

7.4.1.2 Diet Composition

Diet composition for each receptor was approximated using best professional judgment based on information found in the literature. Because receptors were selected to represent feeding guilds (e.g., short-tailed shrew for terrestrial mammalian invertivores), their modeled diets emphasized primary food sources (e.g., earthworms for shrews). Use of multiple feeding guilds minimizes the likelihood that risk for any particular guild is underestimated. The most appropriate tissue data collected in the field were used to represent food concentrations in the models. Diets were simplified for the purpose of the risk assessment, and because exposure estimates were determinate, they do not fully capture the temporal and individual variability in receptors' diets, which may introduce some uncertainty into risk assessment results. However, in the case of the shrew and wren, the evaluation of multiple point estimates of exposure across the marsh helps to reduce this uncertainty, and provides a representative portrait of the spatial variability in risk to individual organisms foraging at different parts of the marsh.

7.4.1.3 Area Use

Area use for wildlife receptors was addressed in the risk assessment by modeling exposures according to the proportional size of the marsh or river relative to their home range sizes. Point estimates of exposure for shrews and wrens were used to approximate the average exposure an individual receptor would receive if its home ranges were centered at a sampling station. These estimates could be uncertain if there is considerable variability in CoPC concentrations in food or abiotic media across the home range. However, as discussed above, the spatial variability in risk across the marsh can be examined by considering the range of hazard quotients across different sampling locations. For example, the LOAEL-based hazard quotients for arsenic range from 0.023 to 12 for wrens and from 1.6 to 370 for shrews. Therefore, even if the exposure estimates are somewhat inaccurate for any individual, the range of exposure estimates provides bounds on the likely magnitude of risk to the receptor populations. Marsh-wide evaluations for these two species, although not really representative of risk to any individual territorial shrew or wren, indicate the average risk to a hypothetical avian or mammalian insectivore that potentially forages throughout the OU-3 marsh. Results of the marsh-wide evaluations support risk characterizations made on the basis of station-specific evaluations.

Larger receptors, such as the red-tailed hawk, osprey, and gull have foraging ranges that are substantially larger than the area of the marsh or adjacent reach of the Raritan River. Therefore, for these receptors, the exposure models scaled the exposure to the site prey and media based on the size of the marsh (or river) proportional to the foraging range of the receptors. Information on foraging ranges for the different receptors was taken from literature studies. Uncertainty is introduced using this approach because home range size is dependent on geographic location and habitat conditions, prey density, intra-specific competition, and experimental methods used to measure foraging area, among other factors. Additionally, the total foraging range incorporates areas that are preferentially used and others that are under-used or avoided depending on factors such as habitat type and food abundance. Therefore, a direct areal comparison of the size of the marsh or river portions of OU-3 to the reported foraging range may somewhat underestimate the proportion of the diet they could potentially receive from OU-3. However, the hazard quotients are so low for these species that this potential underestimation has little bearing on risk conclusions. In fact, even under a highly conservative and ecologically unrealistic assumption that an individual osprey, gull, or red-tailed hawk were to obtain all its food from OU-3 (i.e., no area use factor adjustment), there still would be no chemicals with LOAEL-based hazard quotients greater than 1.0, and only red-tailed hawk exposure to aluminum would have a NOAEL-based hazard quotient greater than 1.0 (1.2). Therefore, application of area use factors for wide-ranging receptors does not result in an underestimation of risk to these receptors.

7.4.1.4 Measured CoPC Concentrations in Environmental Media and Prey

All CoPC concentrations used to estimate wildlife exposures were measured values, which avoided the uncertainties associated with highly conservative sediment to biota transfer factors one might use to model CoPC concentrations. The sediment sampling locations, however, were focused on the drainage features in the marsh where contaminant concentrations are expected to be the highest. This bias may lead to an overestimate of the mean contaminant concentrations in sediment (i.e., by disproportionately, on an areal basis, including higher concentrations) and an overestimate of risk for receptors such as the muskrat, which forage across the entire marsh.

Some CoPCs were undetected in all prey or sediment samples, thus there is some uncertainty surrounding undetected results used to calculate exposures. A reported undetected value indicates that the true concentration of the analyte is somewhere between zero and the limit of detection. In the risk model, all analyses with results reported as undetected were represented as one-half the detection limit, which may have underestimated or overestimated true concentrations, but by selecting a measure of central tendency, this is not likely to greatly bias results in one direction or the other, and hazard quotients for undetected CoPCs were generally so low that this approach has little bearing on risk estimates. The only instances where undetected chemicals were identified as possible risk drivers were for shrew exposure to hexachlorobenzene and hexachlorocyclopentadiene. For the first chemical, the detection limit was low (0.19 mg/kg) and the risk is attributable to the very low TRV for this compound (0.08 mg/kg-day). Hexachlorocyclopentadiene had very high detection limits in earthworms from the marsh and reference area (100–160 mg/kg) and these high limits drive the putative risk attributed to this CoPC.

7.4.1.5 CoPC Bioavailability

In the absence of site-specific data on bioavailability, the risk models assumed that the form of a CoPC present in the environment was absorbed with the same efficiency as the chemical form used in the laboratory study from which the TRV was derived. The assumption that both the environmental and tested forms of a chemical are absorbed with the same efficiency could result in an overestimation of exposure and risk across the assessed receptors, particularly in the case of some metals where bioavailability is highly dependent on the mineralized form of the chemical. However, because these TRVs were used to evaluate both OU-3 and reference exposures, inflation of the risk estimates was somewhat controlled through comparison of the OU-3 and reference exposure scenarios, although hazard quotients elevated above reference results do not necessarily indicate unacceptable risk, particularly when the TRVs used to estimate risk were conservative, and the gastrointestinal absorption efficiency was assumed to be 100 percent.

7.4.2 Toxicity Reference Values

Availability of toxicity data and suitability for use at a given site vary on a case-by-case basis. For many chemicals (particularly metals, PCBs, PCDD/Fs, PAHs, and some organochlorine pesticides) the selection of TRVs used in this assessment was based on Exponent's prior familiarity with and evaluation of the technical quality and ecological relevance of the pertinent studies from which the values were taken. Modeled exposures were compared directly with the best available NOAEL and LOAEL TRVs derived from the literature, as outlined in the effects characterization. However, as also noted, for some chemicals with little or no published toxicological information, studies measuring alternate endpoints or with shorter exposure durations had to be used for TRV derivation, often with the application of uncertainty factors to predict a chronic NOAEL. For purposes of providing a complete risk evaluation, TRVs for these chemicals (primarily VOCs and SVOCs other than PAHs) used in the *Final Screening Level Ecological Risk Assessment Addendum* (CDM 2002b) were adopted directly for use in the BERA.

For some apparent risk-driving chemicals, hazard quotients appear to be elevated as a result of the overly conservative nature of the TRVs from which the quotients are calculated. For example, LOAEL-based hazard quotients for mammalian (shrew and muskrat) exposure to aluminum exceed 1.0 at all stations, including reference locations. The mammalian NOAEL and LOAEL TRVs for aluminum were based on significant reductions in weight gain of second- and third-generation mice exposed to aluminum chloride dissolved in drinking water (Ondreicka et al. 1966). Because the TRVs are based on exposures to aluminum dissolved in drinking water, which is more available, but a very minor exposure route for wildlife receptors, they very likely over-estimate the bioavailability resulting from dietary exposure to this CoPC at OU-3. Thus, the magnitude of ecological effects to mammalian receptors is likely to be lower than expected based on the TRV study, especially considering that this TRV also predicts adverse effects to mammalian receptors at background aluminum concentrations. In the screening assessment (CDM 2002b), a mammalian NOAEL of 74.6 mg/kg-day was used, based on an LD50 value with a 50-fold uncertainty factor applied. The derivation of chronic TRVs by application of uncertainty factors to acute values also represents a considerable uncertainty. However, if this value were closer to the true no-effects threshold, it would decrease all mammalian hazard quotients about 40-fold from values reported in this risk assessment. However, for shrews, NOAEL and LOAEL-based hazard quotients would still exceed 1.0 at all OU-3 marsh and reference locations.

Conservative assumptions were also made in the selection of the mercury TRVs, which were based on exposures to methylmercury, which is much more toxic to wildlife than inorganic mercury. While the methylated form is predominant in prey, methylmercury concentrations are generally low (i.e., <0.01 to 2 μg/kg) in sediment and make up <0.1 to 16 percent of total mercury (Gilmour and Henry 1991). In some cases, sediment ingestion is a major contributor to the total mercury exposure of receptors. For example, at Stations 12 and 17, about 90 percent of the wren exposure and 40–45 percent of the shrew exposure to mercury are attributable to sediment ingestion. In cases such as these where a substantial proportion of the exposure is to the inorganic form of the metal, use of a methylmercury TRV will tend to overestimate risks. In the screening assessment (CDM 2002b), the avian NOAEL was 0.45 mg/kg-day based on mercuric chloride (an inorganic form). If this TRV were used in the risk assessment, NOAEL-based hazard quotients would range from 0.078–0.34 at reference stations, and 0.099–9.2 at OU-3 marsh stations. Therefore, although the TRV used in the assessment may overestimate the magnitude of the avian mercury hazard quotients, this evaluation suggests that risk of adverse effects to birds from mercury would still be possible even if an alternate value were used.

A few CoPCs could not be evaluated quantitatively because of a lack of appropriate TRVs, such as antimony, cobalt, iron, and silver for birds, and therefore there is some uncertainty about their potential to cause adverse ecological effects. However, for antimony and cobalt, the likelihood of adverse effects to mammalian receptors was considered low. Therefore, unless birds have much greater sensitivity to these chemicals, mammalian results suggest that adverse effects to avian populations are also unlikely. In other cases, only a NOAEL TRV was identified, such as for iron and silver for mammals. In these cases where the no-effect level is unbounded, no determination can be made regarding whether the daily exposure would be sufficient to pass the dosage at which the onset of adverse effects would first be affected.

The modeling technique used in the risk assessment evaluates each chemical individually, because the TRVs used for evaluating the ecological significance of exposure are also chemical-specific. Chemical-specific hazard quotients calculated by this method permit identification of specific chemicals that may cause adverse effects in ecological receptors. Simultaneous exposure to multiple chemicals could produce cumulative effects that are greater than the effects predicted for individual chemicals. However, determining this requires a detailed understanding of mode of action and target organ for each chemical in each receptor. Simple approaches such as summation of individual hazard quotients to calculate a hazard index are sometimes used to estimate cumulative effects; however, this assumes effects are additive, which may not be true based on the chemical-specific modes of action, and may be an overly-conservative approach if some CoPCs act antagonistically. Additionally, hazard indices can be artificially inflated if uncertainty associated with TRV selection, as discussed above, leads to overly conservative estimates of risk for individual CoPCs, as appears to be the case for chemicals such as iron and aluminum.

7.4.3 Uncertainty in TRV Extrapolation

The range of toxicity thresholds reported in the literature for different test species can be very large, even among those studies deemed suitable for extrapolation to the receptor species of interest. Consequently, uncertainty exists for extrapolated TRVs. This uncertainty can be considerable when uncertainty factors are used to extrapolate from acute to chronic toxicity thresholds, as was done for some chemicals in the screening assessment. Observational errors in conducting toxicological experiments from which a TRV is derived stem primarily from parameter uncertainty. Uncertainty in TRV extrapolation, which may arise because of suspected differences in physiological responses of organisms to chemical exposures under identical conditions, is the result of model uncertainty. In the selection process used by Exponent to identify TRVs, selecting the lowest available value from pertinent, technically acceptable studies minimized the possibility that chosen values may underestimate risks. Additionally, analysis of the available literature provided no reason to assume that the receptors evaluated in this investigation would be more sensitive to CoPCs than those tested in the respective toxicity studies cited.

7.4.4 Reference Area Risk Estimates

For shrews, nine CoPCs (PCBs, aluminum, arsenic, cobalt, copper, iron, mercury, selenium, and vanadium) had NOAEL-based hazard quotients exceeding 1.0 at one or more marsh reference stations (Figure 7-1). Of these, PCBs, aluminum, arsenic, and copper also had LOAEL-based hazard quotients greater than 1.0 for at least one station. Muskrats also had four chemicals (aluminum, arsenic, iron and vanadium) with NOAEL-based hazard quotients exceeding 1.0 (Table 7-5). These results would suggest a possibility of adverse effects to wildlife receptors inhabiting the marsh reference area.

A number of factors could possibly account for reference area hazard quotient exceedances. First, as noted above, for some CoPCs, TRVs may be overly conservative, resulting in inflated risk estimates. This appears to be the case for aluminum in mammals, where hazard quotients in the reference area are high (e.g., NOAEL-based hazard quotients of 130–350 for shrews), but comparable to risk estimates in the OU-3 marsh. Over-estimating CoPC bioavailability can also result in elevated risk estimates at the reference area. Second, risk estimates for some chemicals that tend to be ubiquitous in industrialized environments, such as PCBs, mercury, and lead, may reflect localized background risk in these environments. Third, the risk estimates may indicate influences on the reference area from CoPC releases at the site. However, as noted in Section 3.2, the marsh reference locations were considered to be removed from influence of site contamination by virtue of their location on the far side of a hillock from the upland area of the Sites, as well as the marsh. Therefore, it appears unlikely that transport of CoPCs from the site to the marsh reference areas could have occurred. A fourth possibility is that other sources in the Raritan River watershed contributed to CoPC concentrations at the reference areas either through direct disposal, surface water transport in river water to the marsh, or by disposal of Raritan River dredge spoils in the vicinity of the reference areas.

7.4.5 Population Level Uncertainty

The implicit assumption in the assessment is that endpoints based on the responses of individuals translate directly to comparable effects at the population-level. The hazard quotient approach presumes that an exposure level associated with individual effects is absolutely consistent (i.e., lacking in natural variability) and is likely to cause demographic effects on a wild population. Although there is uncertainty associated with these assumptions, the conservative nature of the selection of input parameters for individual exposure scenarios should result in a conservative risk assessment when considering population-level effects. As noted in the SLERA addendum (CDM 2002b), "Sometimes, adverse effects on individuals will not be reflected on the population and community level. The predicted risks may overestimate the actual population or community level effects."

8 Interpretation of Ecological Significance

The BERA investigated risks to various components of the ecological community in the OU-3 marsh and adjoining the Raritan River. The following assessment endpoints were evaluated:

- Aquatic and terrestrial invertebrate community abundance and population production
- Estuarine fish population abundance and community structure
- Abundance of avian and mammalian populations.

The measurement endpoints included sediment toxicity tests to assess potential risk to aquatic macroinvertebrates and terrestrial invertebrates, CoPC concentrations in estuarine fishes compared to literature-based effect-level thresholds to assess potential risk to estuarine fishes, and food-web modeling to assess potential risk to birds and mammals. In this section, the results of these various lines of investigation are summarized to determine the overall ecological significance of exposure of receptors to CoPCs.

8.1 Aquatic and Terrestrial Invertebrates

In the marsh, the BERA evaluated risks to aquatic and terrestrial invertebrate communities using blackworm and earthworm sediment toxicity tests. The sediment toxicity tests conducted at 10 OU-3 stations and 3 reference stations found no lethal toxicity for the earthworm, and lethal toxicity in 3 of 10 stations for the blackworm. These three stations were located in the ADC/ARC/HRDD drainage, a small drainage west of the ARC/HRDD drainage, and on the HRDD. The degree to which resident aquatic invertebrate populations throughout most of the OU-3 marsh would be affected by the mortality of individual organisms is uncertain.

In contrast with lethal toxicity, sublethal toxicity (i.e., reduced growth) at OU-3 was more widespread, occurring at half of the 10 OU-3 stations for the blackworm test and at four of the 10 stations for the earthworm test. With one exception, each of these stations was located in drainage channels in the marsh. The final biomass at these stations at the end of testing was 2–60 percent of the mean reference value for the blackworm test and 16–36 percent of the mean reference value for the earthworm test. These results indicate that individual organisms at several locations within drainage channels in the OU-3 marsh may be affected by reduced growth. However, the degree to which this sublethal effect would noticeably influence resident aquatic and terrestrial invertebrate populations at OU-3 in the general absence of mortality is uncertain.

Site-specific SQVs (i.e., AETs) were calculated for 18 key chemicals (i.e., 13 metals and 5 organic compounds) at OU-3 using the information on sediment toxicity in the blackworm and earthworm tests collected in 2004. The AETs allowed the toxicological potential of the chemical concentrations measured at all 2004 and historical stations to be evaluated even though sediment toxicity was not measured at all of those stations. As an index of risk of sediment toxicity, AETQs were calculated for each chemical at each station by dividing the station-specific concentration of each chemical by its AET. The overall risk of sediment toxicity posed at a station was then estimated by calculating the mean AETQ for the 18 target chemicals at each station. The mean AETQs calculated for OU-3 showed strong correlations with sublethal effects in both the blackworm and earthworm tests, indicating that they were useful predictors of the potential presence of sublethal toxicity at OU-3 stations where toxicity testing was not conducted (i.e., stations sampled for chemical analysis during the historical investigations).

The application of the mean AETQs to all of the data (i.e., data from both the 2004 and historical investigations) on chemical concentrations collected in surface sediment (i.e., 0–6 in.) at OU-3 identified areas that may pose risk of sublethal toxicity to resident invertebrates. The stations with the highest risk of sublethal toxicity (i.e., mean AETQ greater than 10 or between 5 and 9.9) were located in or adjacent to the SPD/ADC and ADC/ARC/HRDD drainages, with the exception of one station northwest of the HRDD. Throughout most of the remainder of the OU-3 marsh, risks of sublethal toxicity were moderate to low (i.e., mean AETQ between 1 and 4.9). Little risk of sublethal toxicity (i.e., mean AETQ less than 1) was posed in the northern part of the marsh and in the ARC/HRDD drainage. The application of mean AETQs to the chemical data collected in surface sediments at the OU-3 marsh suggests that some risk of sublethal toxicity may exist throughout much of the marsh, with the highest risk associated with sediment in the SPD/ADC drainage. The location of most of the 2004 and historical sediment stations in drainage channels, where contaminant concentrations are expected to be highest, precludes the extrapolation of the station-specific analysis to the entire marsh or even to areas between drainage channels that were not sampled.

While the supplemental investigation considered only sediment toxicity in marsh sediment, previous testing of river sediment found limited occurrence of toxicity in river sediments adjacent to the site. The SLERA addendum (CDM 2002b) concluded that adverse effects on benthic organisms from contaminated Raritan River sediment are localized to the area where the main drainage channel (i.e., the SPD/ADC drainage channel) for the marsh enters the river.

8.2 Estuarine Fishes

The BERA re-examined potential effects to estuarine fishes, which were initially evaluated in the SLERA addendum (CDM 2002b), by comparing chemical concentrations in composite whole body fish samples to effects-based scientific literature values. That comparison indicated that maximum concentrations of most CoPCs were below the lowest reported literature thresholds for adverse effects. Therefore, there is a very low likelihood of adverse effects to estuarine fish populations from exposure to CoPCs in surface waters of the Raritan River. This conclusion is supported by the lack of exceedance of surface water quality standards in 1999 (with the exception of copper stations adjacent to the Sites and reference area stations), as described in the SLERA addendum and reiterated in the BERA.

8.3 Birds and Mammals

The BERA evaluated risks to avian and mammalian receptor populations in the marsh, and avian receptor populations in the river using food-web modeling. These results are summarized below. While the discussion below refers specifically to risk estimates based on 2004 data, inclusion of historical sediment and prey tissue chemistry data resulted in no differences in the suite of receptor-CoPC combinations with hazard quotients greater than 1.0, when compared to hazard quotients calculated based on 2004 data only. The location of most marsh sediment sampling stations in drainage channels where contaminant concentrations are expected to be highest limits the extrapolation of station-specific results to the entire marsh and may overestimate risk for receptors that forage across the entire marsh.

8.3.1 Marsh Receptors

The food-web modeling for receptors in the marsh (red-tailed hawk, marsh wren, short-tailed shrew, and muskrat) indicated that negligible risks are predicted at both the individual and population level for carnivorous birds, as represented by the red-tailed hawk, that forage in the marsh. There is some indication that herbivorous mammalian receptors that forage across the entire marsh, such as muskrats, could exhibit adverse effects from exposures to arsenic and mercury, although the hazard quotients are generally low. The LOAEL-based hazard quotients for arsenic and mercury were 8.6 and 1.5, respectively. The only other contaminant with a LOAEL-based hazard quotient exceeding one was aluminum, which had hazard quotients similar to the reference area and is not considered to be site-related.

With respect to NOAEL-based hazard quotients for CoPCs other than arsenic, mercury, and aluminum for the muskrat, hazard quotients slightly exceeded one for chromium and copper (i.e., 1.2 for both), were less than the hazard quotient for the reference area for vanadium (i.e., 3.9 versus 5.2), and exceeded the reference area for iron (i.e., 49 versus 24), which is unlikely to be site-related. Hazard quotients for other contaminants were less than one. The foraging range of a muskrat is sufficiently large that it is unlikely that more than one or two muskrats might potentially occur in the marsh, and it is not clear that adverse effects associated with exceedance of a no-effects threshold, if any, would have an impact on the local population.

For receptors such as the muskrat that forage across the entire marsh, it is important to note that sediment sampling to date has focused on locations in the drainage channels where contaminant concentrations are likely the highest. This bias may lead to an overestimate of the mean contaminant concentrations in sediment (i.e., by disproportionately, on an areal basis, including higher concentrations) and an overestimate of risk for these receptors.

The likelihood of adverse effects is greatest for individuals of species with small home ranges (i.e., shrews and wrens). However, even within these species, there is considerable spatial variability in the risk estimates (Figures 7-1 and 7-2) that largely mirrors the spatial variability of CoPC concentrations in sediment, especially arsenic, mercury, and total PCBs (Figures 3-4, 3-5, and 3-6), which are the primary risk drivers. The risk appears to be greatest in the SPD/ADC drainage (Stations 12 and 16), the ADC/ARC/HRDD drainage (Station 17), and at the edge of the HRDD (Station 22 for PCBs). Around the perimeter of the marsh, hazard quotients are generally lower, and in some cases less than or equivalent to reference area hazard quotients. For example, the LOAEL-based hazard quotients for shrew exposure at Stations 12, 16, and 17 range from 41 to 370, whereas elsewhere in the marsh, values range from 1.6 to 5.0 compared with hazard quotients of 2.0–2.9 at the reference locations.

Because of uncertainties related to factors such as CoPC bioavailability and TRV derivation, exceedance of a LOAEL-based threshold does not necessarily imply that adverse effects would occur to the exposed individual. Furthermore, even if individual organisms were adversely affected in localized areas, it is unclear whether this would translate into population level effects. While CoPC concentrations may be an important factor on a localized basis, factors such as the suitability of periodically inundated and primarily *Phragmites* marsh as habitat for receptors, particularly shrews and other small mammals, may be important determinants of population abundance and distribution when the OU-3 marsh is considered as a whole.

8.3.2 River Receptors

The BERA evaluated risks to wildlife populations in the Raritan River through food-web modeling for omnivorous and piscivorous birds, as represented by the herring gull and osprey, respectively. The model results indicate that negligible risks, at both the individual or population level, are predicted for these receptors. No hazard quotients for the herring gull or osprey exceeded 1.0 for any CoPC in the river portion of OU-3.

8.4 Conclusions

In conclusion, the BERA found that there is a negligible likelihood of adverse effects to fish and wildlife populations of the Raritan River portion of OU-3. However, the SLERA addendum noted the potential for localized adverse effects on benthic organisms from contaminated Raritan River sediment in the area immediately adjacent to where the main drainage channel for the marsh (i.e., the SPD/ADC drainage) enters the river.

In the OU-3 marsh, the BERA found that there is little potential for widespread adverse effects on survival of (i.e., lethal toxicity to) aquatic and terrestrial invertebrates. However, with the exception of the northern part of the marsh and the ARC/HRDD drainage, there is a potential for adverse effects on growth of individual aquatic and terrestrial invertebrates in localized areas (particularly the SPD/ADC and ADC/ARC/HRDD drainage channels) where contaminant concentrations were highest. The effect of sublethal toxicity on invertebrate populations, the assessment endpoint, is uncertain.

Similarly, there is potential for adverse effects on individuals of avian and mammalian invertivore receptor species in the drainage channels of the marsh where CoPC concentrations are elevated. In particular, arsenic, mercury, and/or other PCBs were identified as the primary risk drivers for avian and mammalian receptors. Risk was relatively low for mammalian herbivore receptors that are assumed to forage over the entire marsh, and negligible for avian carnivores with home ranges larger than the area of the marsh. While potential risks were identified for individual invertebrates as well as some individual avian and mammalian receptors, it is uncertain if these potential risks translate to population level effects, which are the assessment endpoints. There is additional uncertainty to the extent that risks determined from sediment data collected primarily in drainage channels are translated to the entire marsh or to areas of the marsh between drainage channels where contaminant concentrations are expected to be lower. Finally, while CoPC concentrations may be an important factor on a localized basis, overall habitat quality for receptors, particularly small mammals, may be an important determinant of population abundance and distribution when the OU-3 marsh is considered as a whole.

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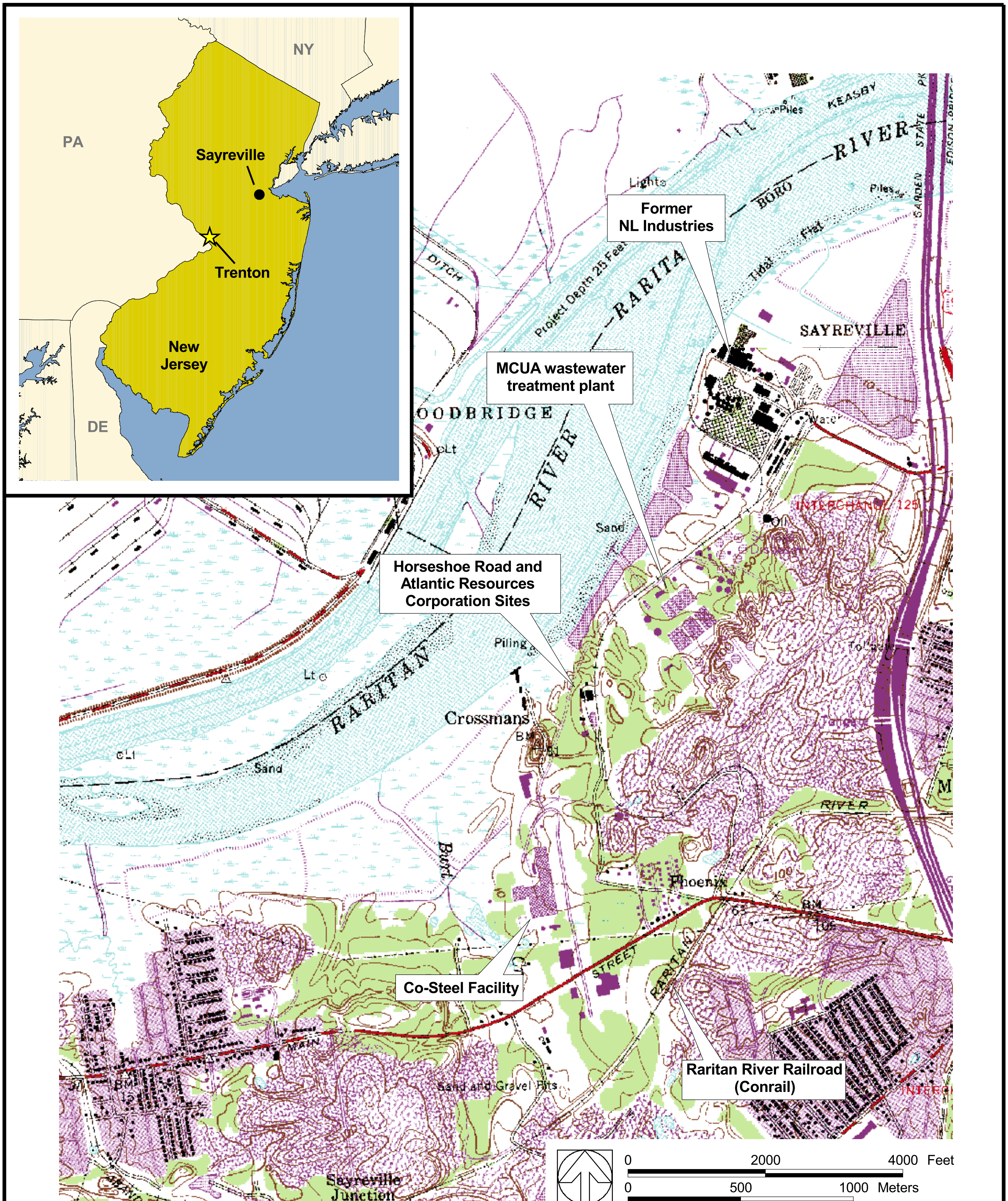
Figures



Source: Base map from USGS topographic map South Amboy (1981) and Perth Amboy (1981).

Figure 1-1. Location of Horseshoe Road and Atlantic Resources Corporation Sites

Exponent

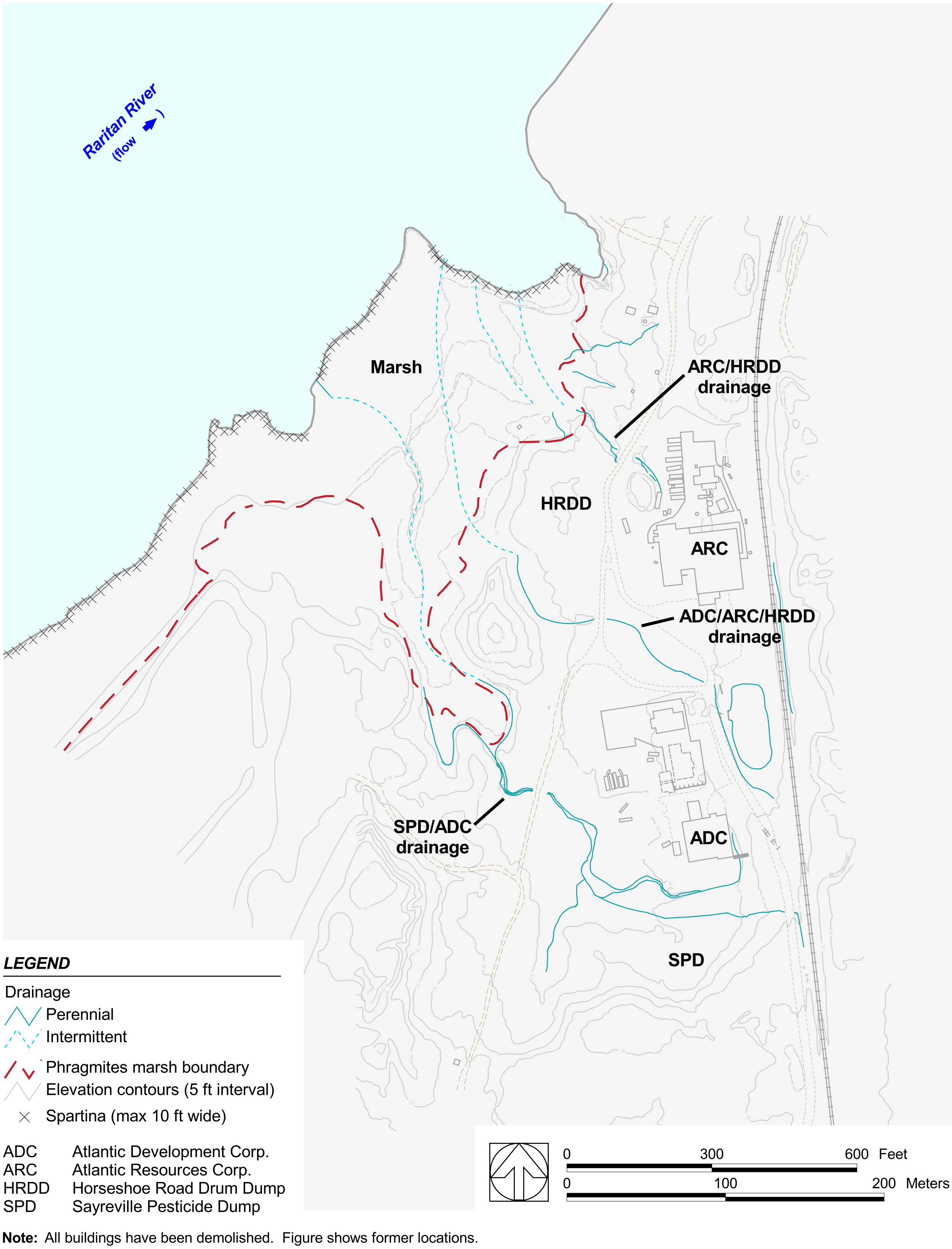


Figure 1-2. Details of the Horseshoe Road and Atlantic Resources Corporation Sites

Exponent®

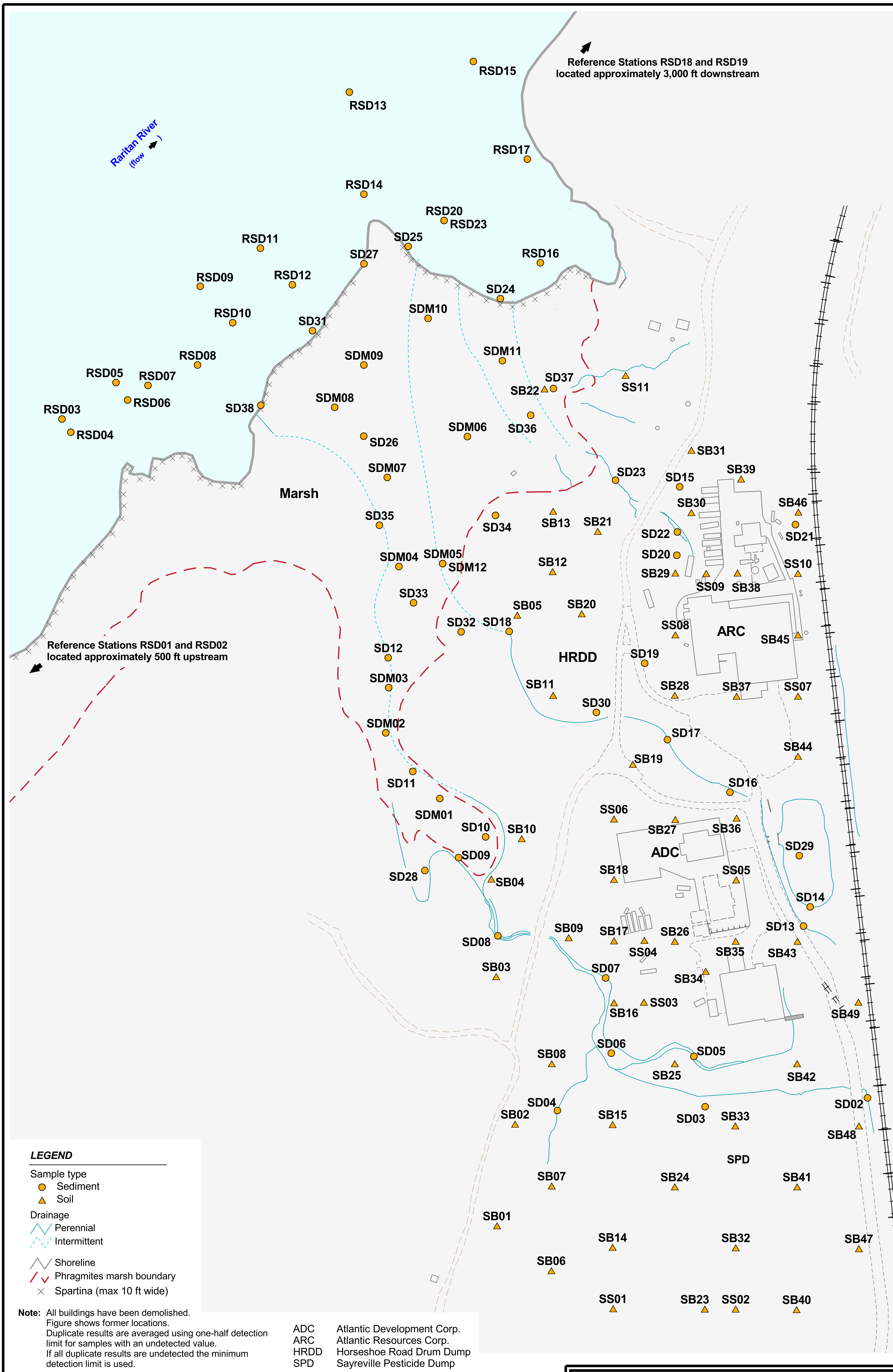


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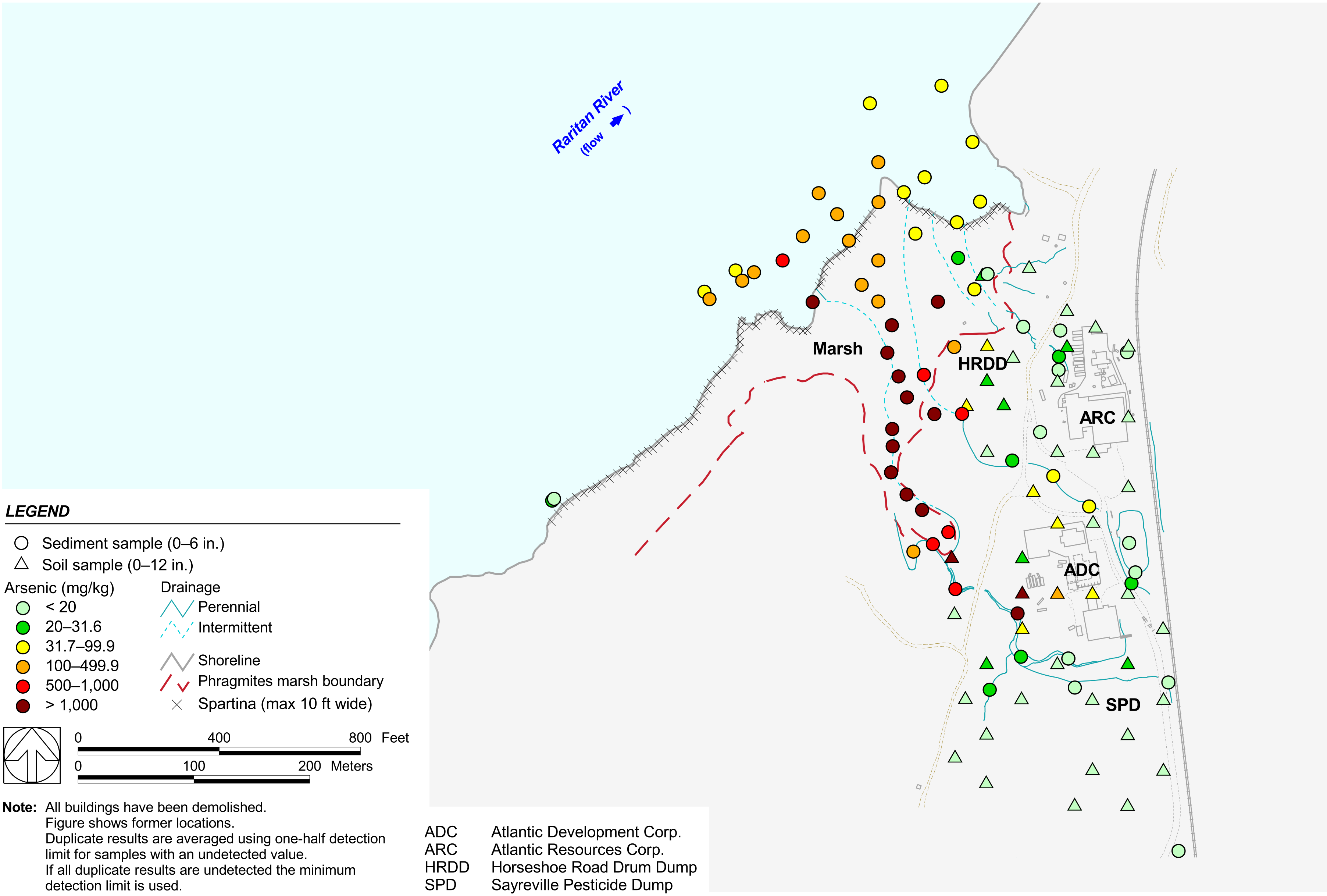
Figure 2-1. Soil and sediment stations for the 1997–1999 investigations

BE02578.001 1004 | May 11, 2006 | Fig 2-1 sed/soil view | Figure 2-1 soil/sed layout | m:/be02578_sayreville/projects/sayerville_0506.apr

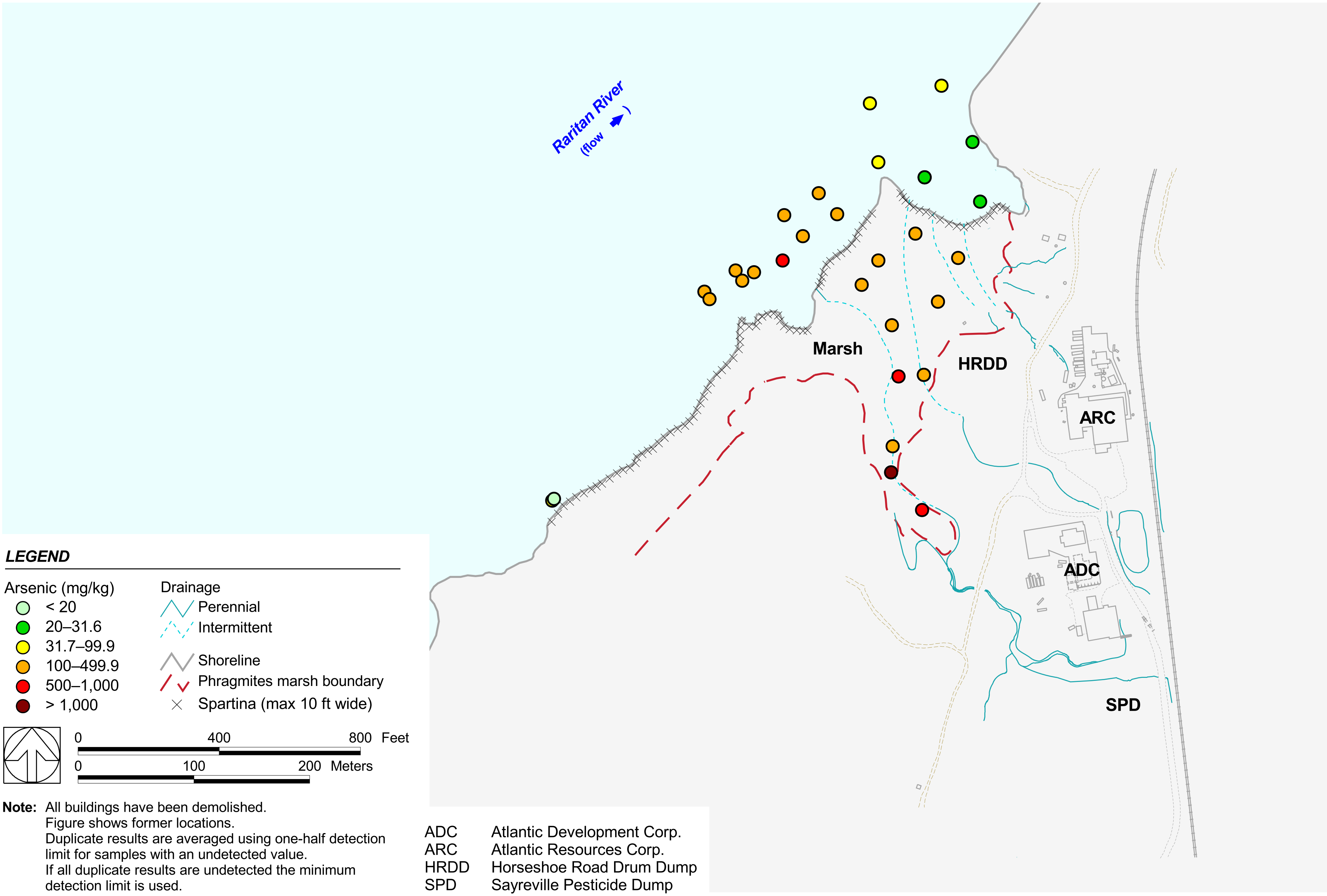


Note: All buildings have been demolished.
Figure shows former locations.
Duplicate results are averaged using one-half detection limit for samples with an undetected value.
If all duplicate results are undetected the minimum detection limit is used.

ADC	Atlantic Development Corp.
ARC	Atlantic Resources Corp.
HRDD	Horseshoe Road Drum Dump
SPD	Sayreville Pesticide Dump

Figure 2-2a. Arsenic concentrations in surface soil (0–12 in.) and sediment (0–6 in.) from historical investigations

Exponent®



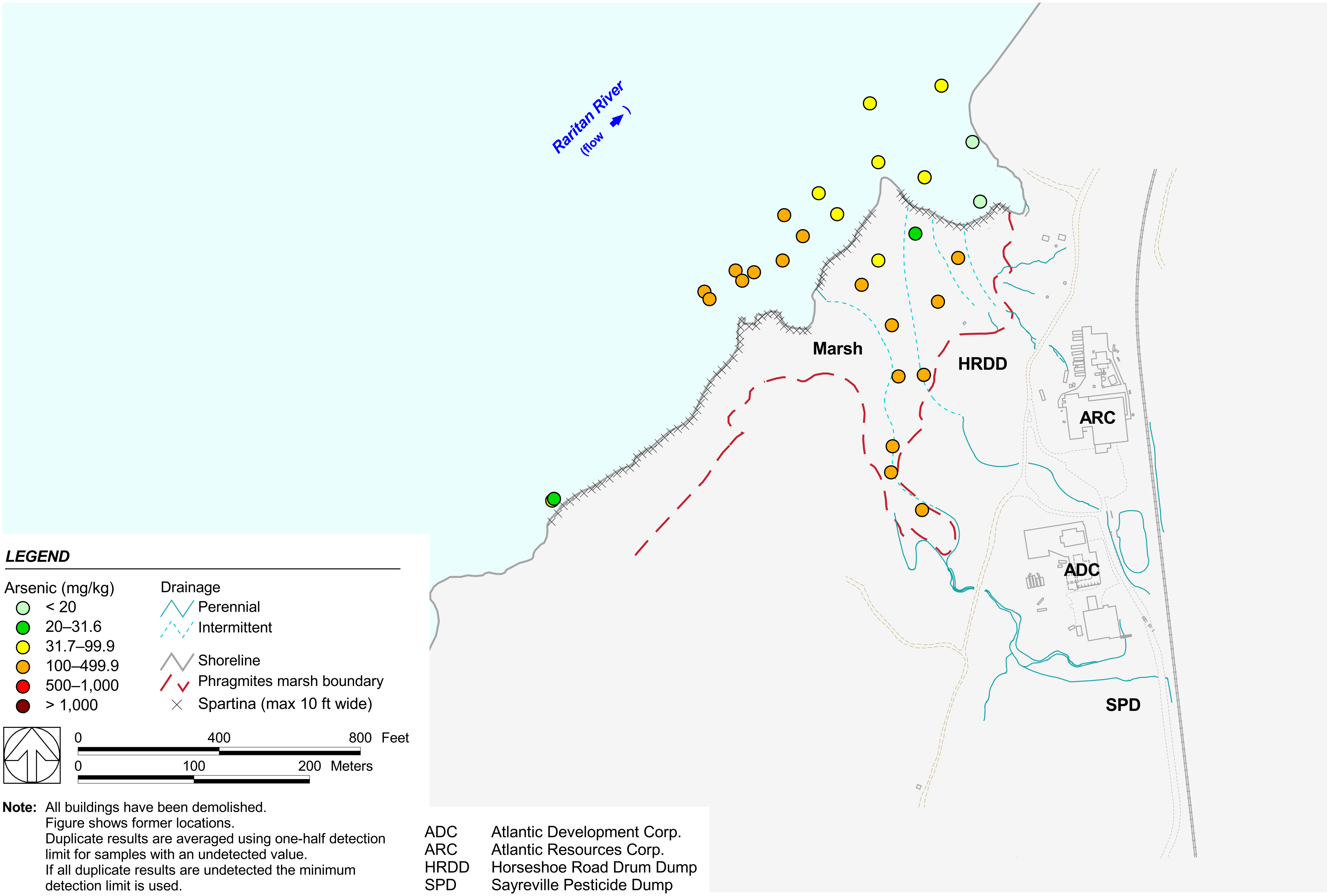
Note: All buildings have been demolished.
Figure shows former locations.
Duplicate results are averaged using one-half detection limit for samples with an undetected value.
If all duplicate results are undetected the minimum detection limit is used.

ADC	Atlantic Development Corp.
ARC	Atlantic Resources Corp.
HRDD	Horseshoe Road Drum Dump
SPD	Sayreville Pesticide Dump

Figure 2-2b. Arsenic concentrations in subsurface sediment (6–18 in.) from historical investigations

Exponent®

BE02578.001 1004 | May 11, 2006 | As/PCB hist point 06-18 view | Fig 2-2b Arsenic 06-18 layout | m:/be02578_sayreville/projects/sayerville_0506.apr



Note: All buildings have been demolished.
Figure shows former locations.
Duplicate results are averaged using one-half detection limit for samples with an undetected value.
If all duplicate results are undetected the minimum detection limit is used.

ADC	Atlantic Development Corp.
ARC	Atlantic Resources Corp.
HRDD	Horseshoe Road Drum Dump
SPD	Sayreville Pesticide Dump

Figure 2-2c. Arsenic concentrations in subsurface sediment (18–30 in.) from historical investigations

Exponent®

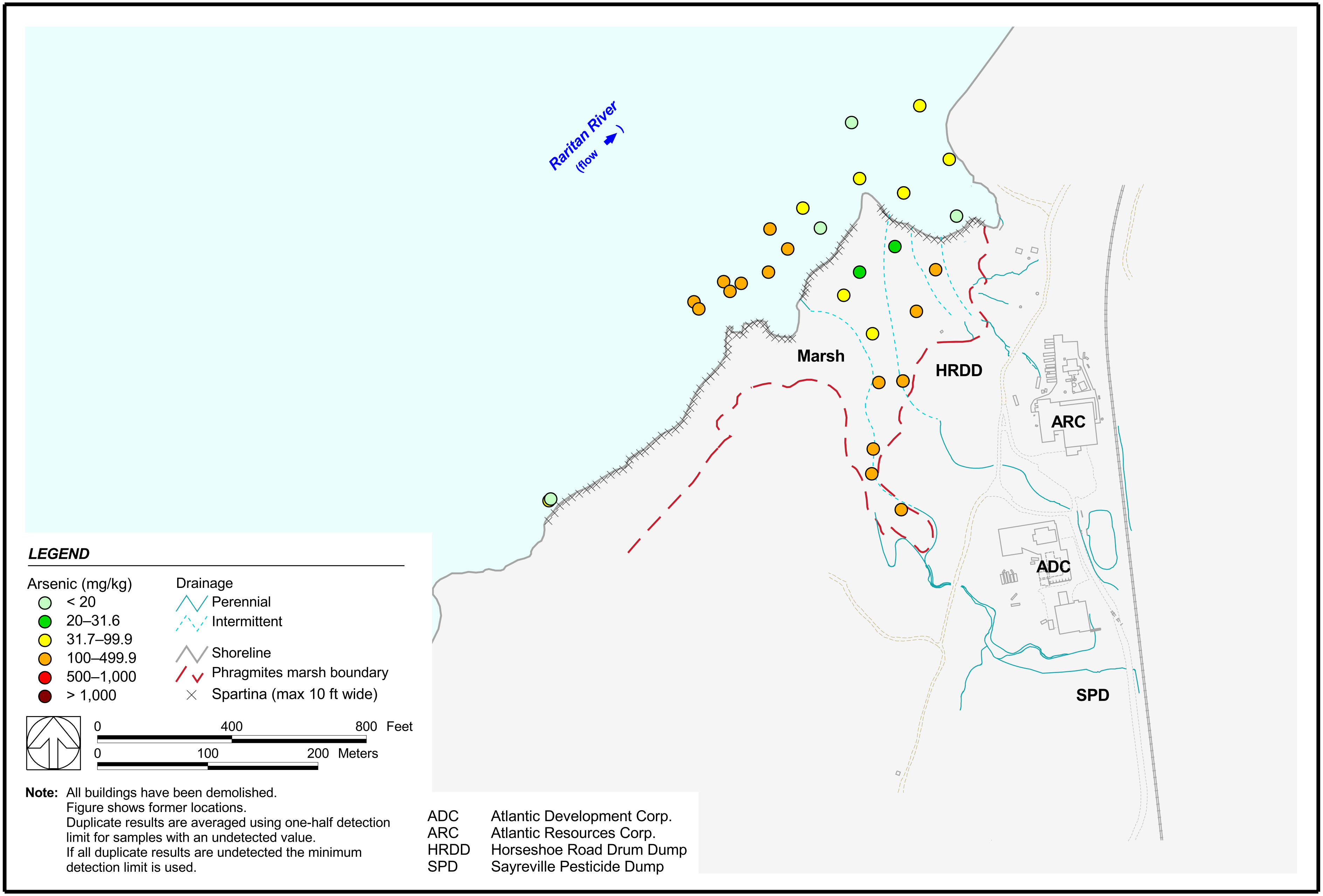


Figure 2-2d. Arsenic concentrations in subsurface sediment (30–42 in.) from historical investigations

Exponent®

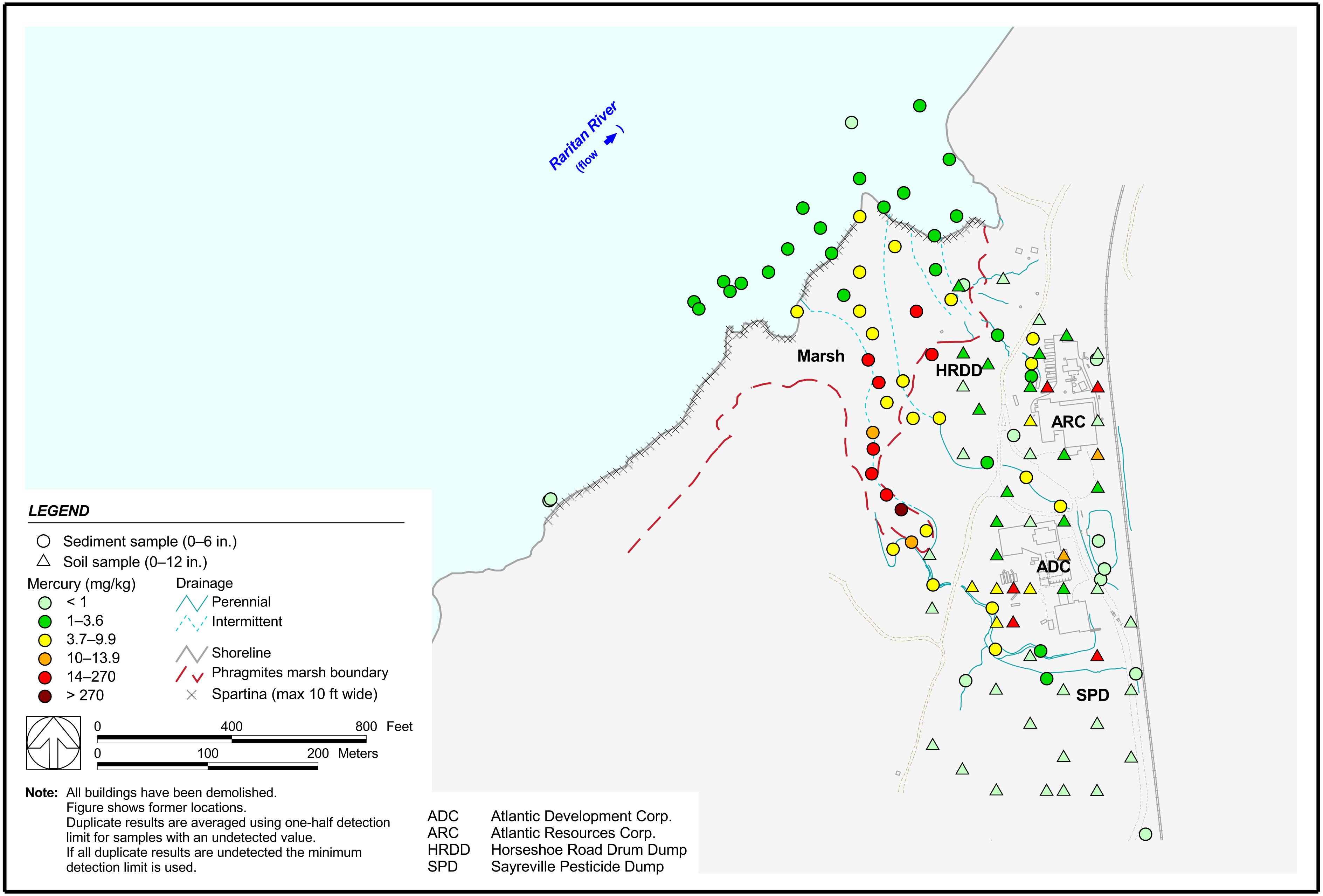


Figure 2-3a. Mercury concentrations in surface soil (0–12 in.) and sediment (0–6 in.) from historical investigations

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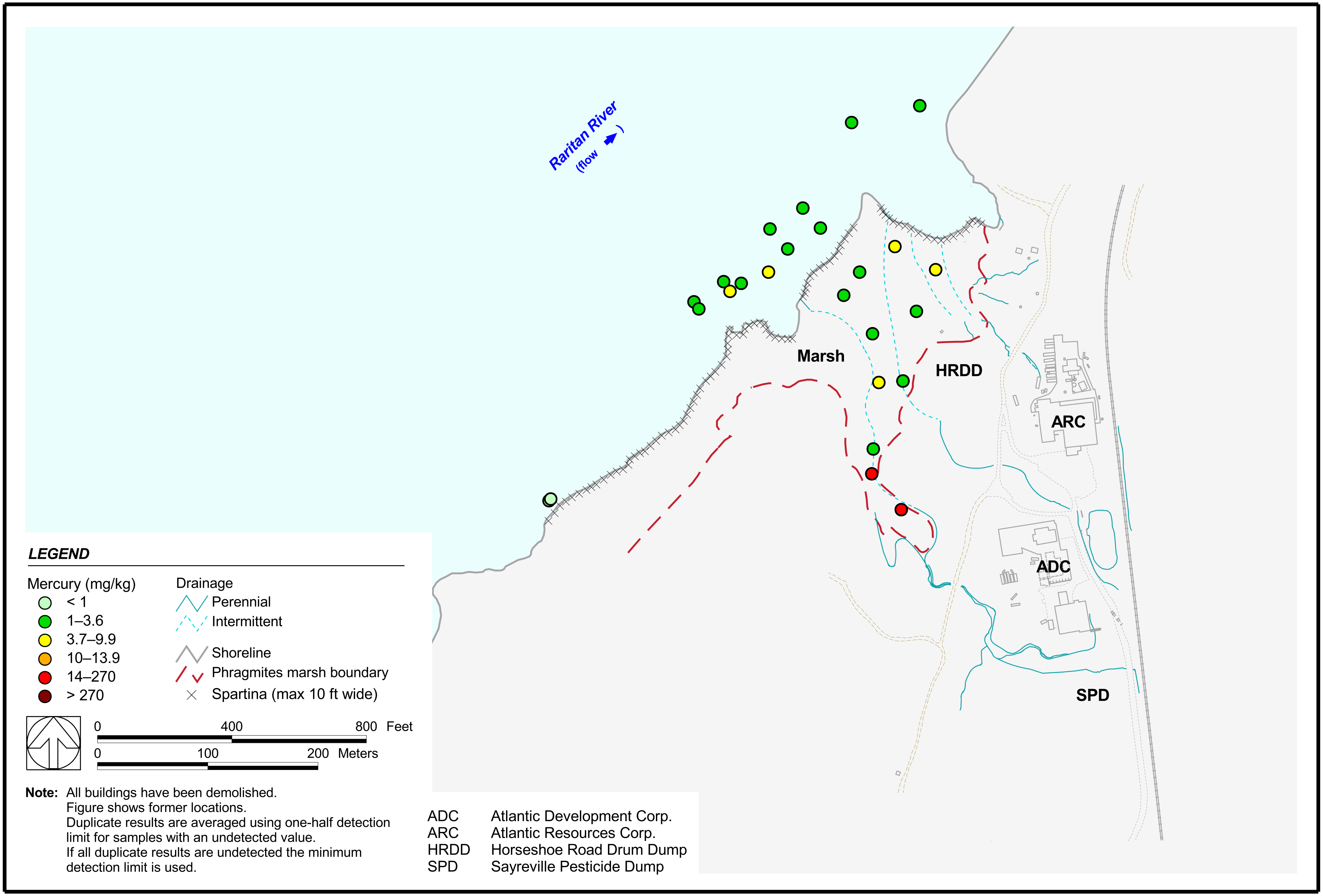

Figure 2-3b. Mercury concentrations in subsurface sediment (6–18 in.) from historical investigations

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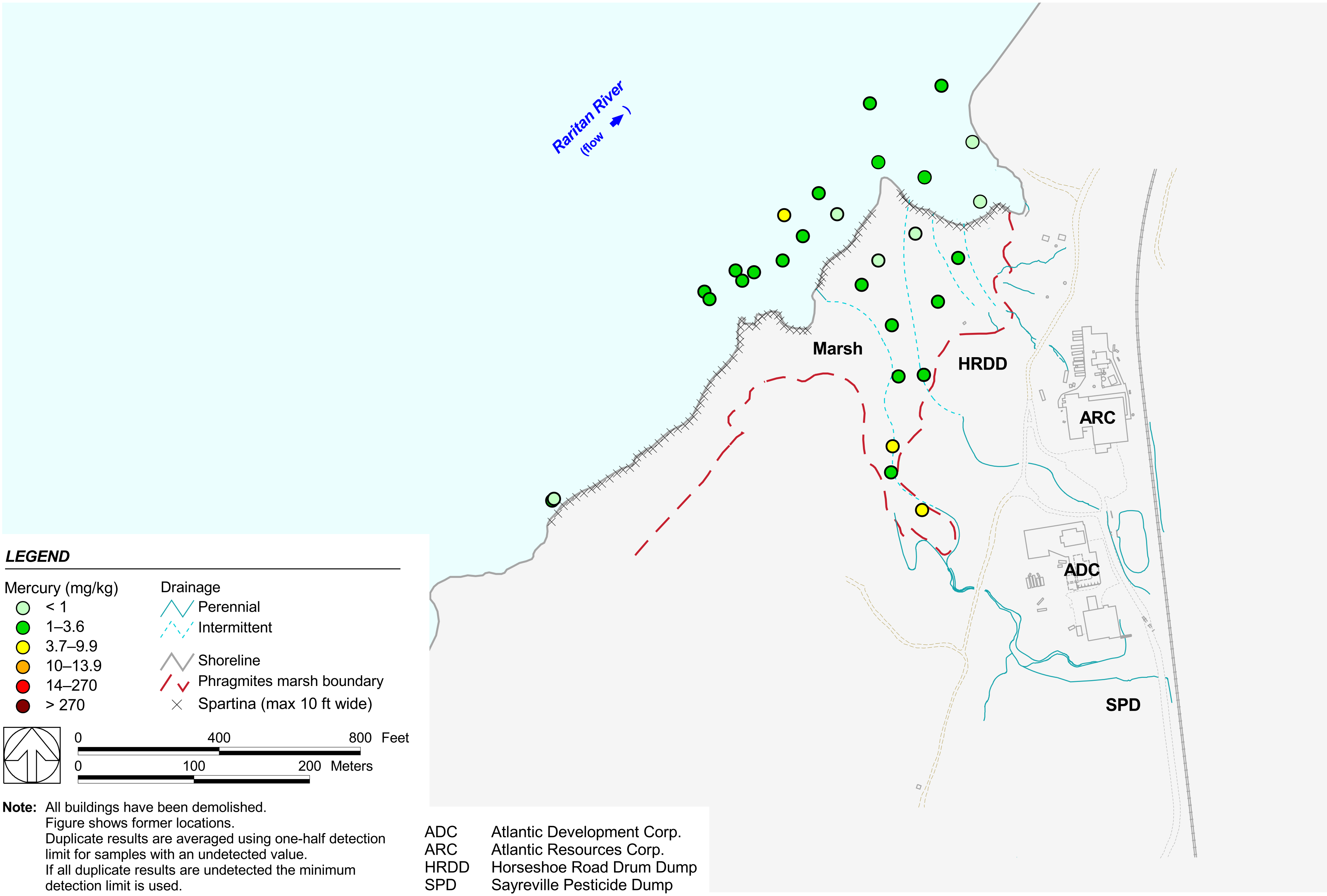

Note: All buildings have been demolished.
Figure shows former locations.
Duplicate results are averaged using one-half detection limit for samples with an undetected value.
If all duplicate results are undetected the minimum detection limit is used.

ADC	Atlantic Development Corp.
ARC	Atlantic Resources Corp.
HRDD	Horseshoe Road Drum Dump
SPD	Sayreville Pesticide Dump

Figure 2-3c. Mercury concentrations in subsurface sediment (18–30 in.) from historical investigations

Exponent®

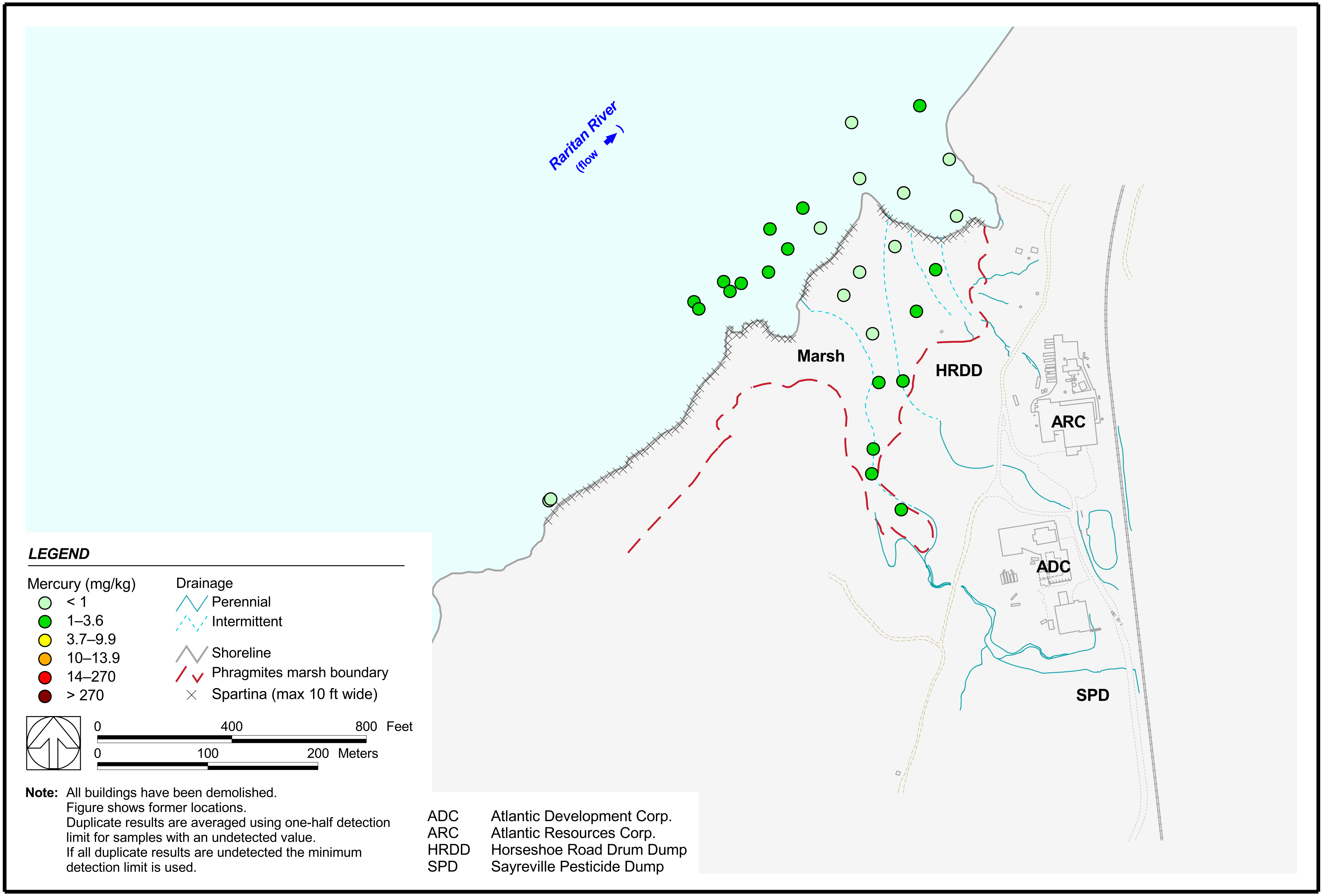

Figure 2-3d. Mercury concentrations in subsurface sediment (30–42 in.) from historical investigations

Exponent®

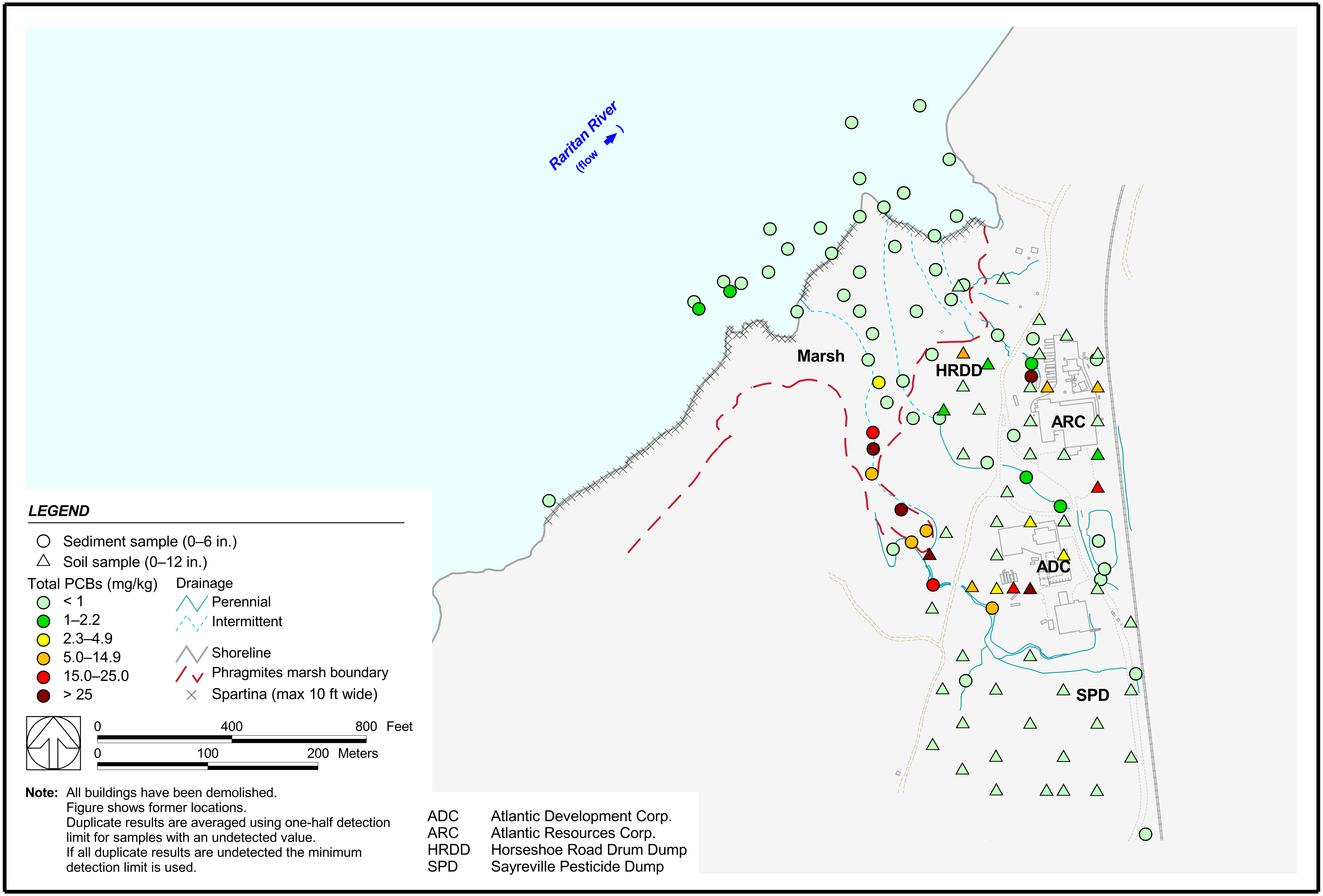

Figure 2-4a. Total PCB concentrations in surface soil (0–12 in.) and sediment (0–6 in.) from historical investigations

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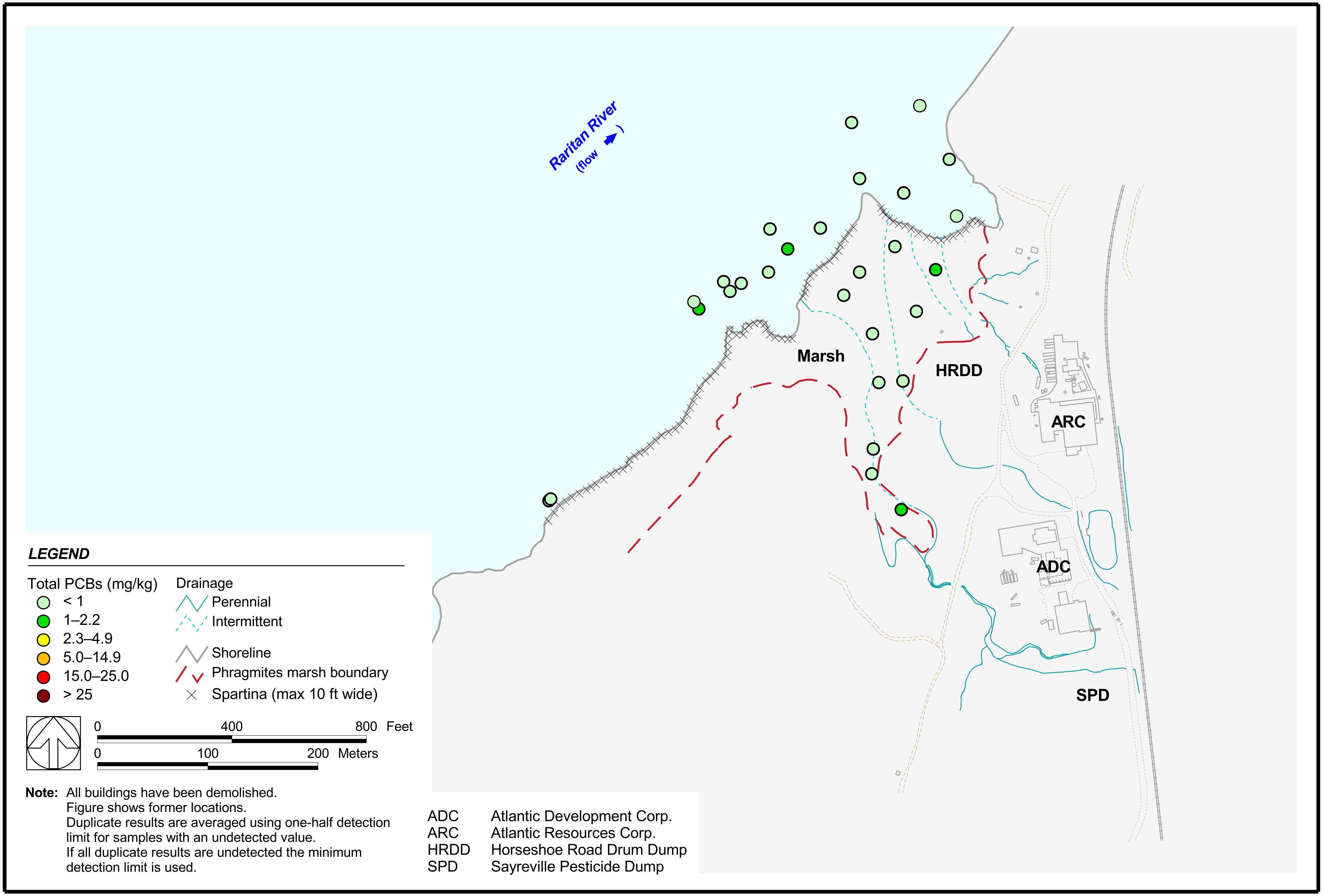

Figure 2-4b. Total PCB concentrations in subsurface sediment (6–18 in.) from historical investigations

Exponent®

BE02578.001 1004 | May 19, 2006 | As/PCB hist point 06-18 view | Fig 2-4b Total PCBs 06-18 layout | m:\be02578_sayreville\projects\sayerville_0506.apr

LEGEND

Sample location type

- Intertidal sediment chemistry
- Intertidal sediment chemistry, aquatic tissue (crabs and/or fish)
- Intertidal sediment chemistry plus PCDD/Fs, aquatic tissue (crabs and/or fish)
- Marsh sediment chemistry, toxicity, and bioaccumulation tests
- Marsh sediment chemistry, toxicity and bioaccumulation tests, and phragmites tissue
- Marsh sediment chemistry, toxicity and bioaccumulation tests, phragmites tissue, and small mammals
- Marsh sediment chemistry plus PCDD/Fs, toxicity and bioaccumulation tests, phragmites tissue, and small mammals
- Marsh sediment PCDD/Fs only
- Small mammals only

Drainage
- Perennial
- Intermittent

- Shoreline
- Phragmites marsh boundary
- Spartina (max 10 ft wide)

ADC	Atlantic Development Corp.
ARC	Atlantic Resources Corp.
HRDD	Horseshoe Road Drum Dump
PCDD/Fs	polychlorinated dibenzo-*p*-dioxins and polychlorinated dibenzofurans

0 400 800 Feet

0 100 200 Meters

Note: All buildings have been demolished. Figure shows former locations.

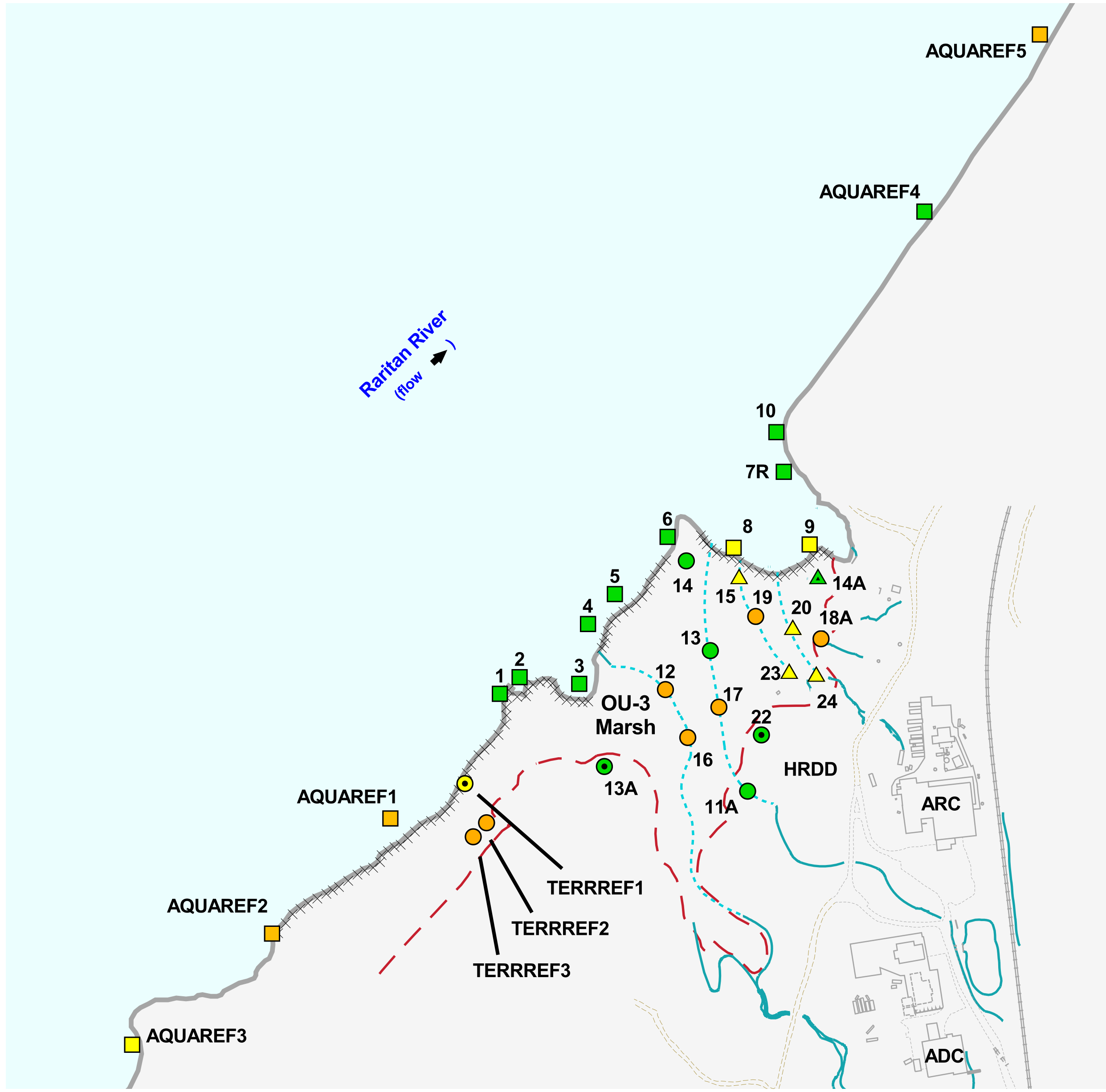

Figure 3-1. Stations sampled at Horseshoe Road/ARC OU-3 in September–October 2004

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BE02578.001 1004 | May 11, 2006 | Fig A-1 Sampled type view | Fig 3-1 Sample type layout | m:/be02578_sayreville/projects/sayerville_0506.apr

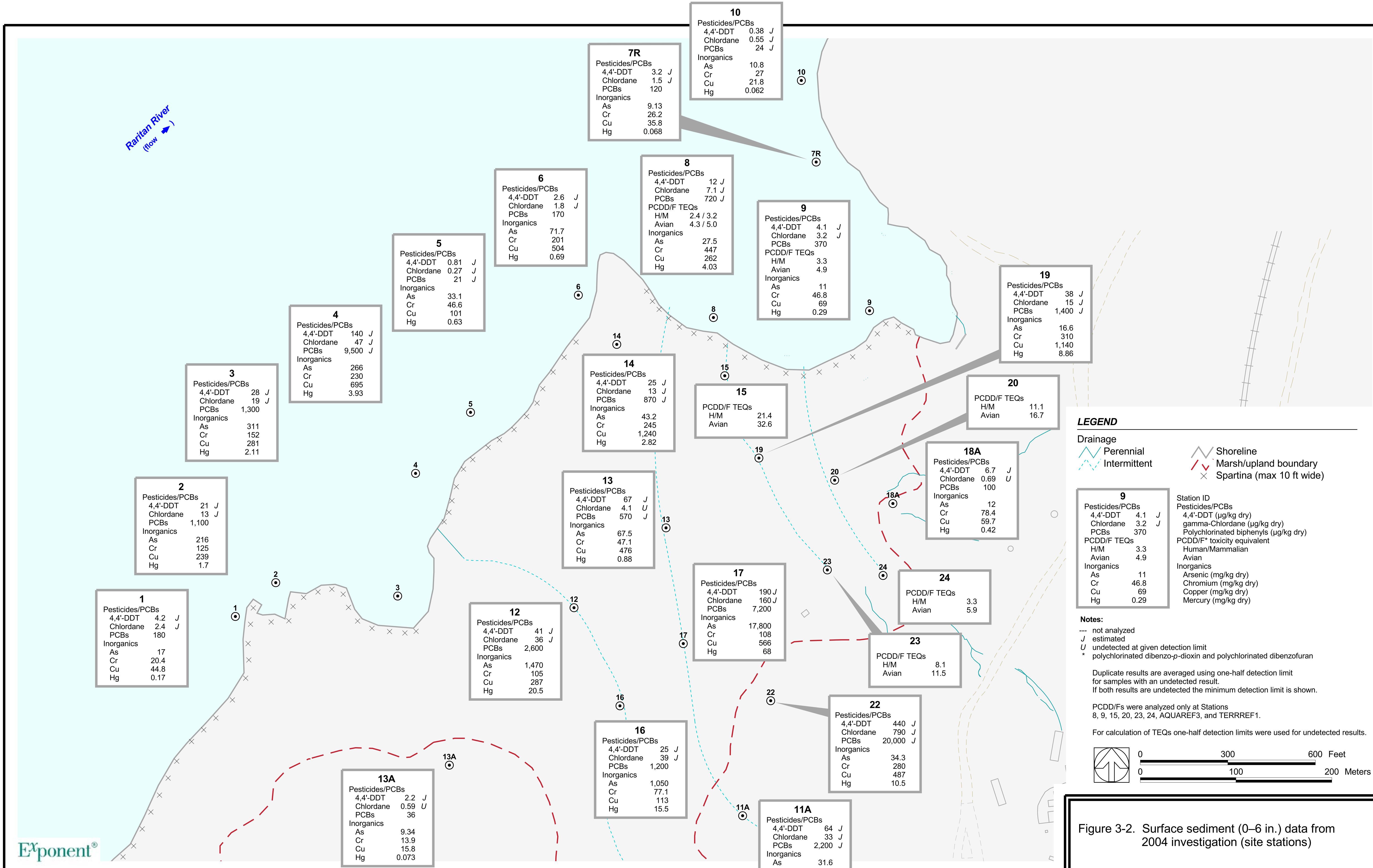


Figure 3-2. Surface sediment (0–6 in.) data from 2004 investigation (site stations)

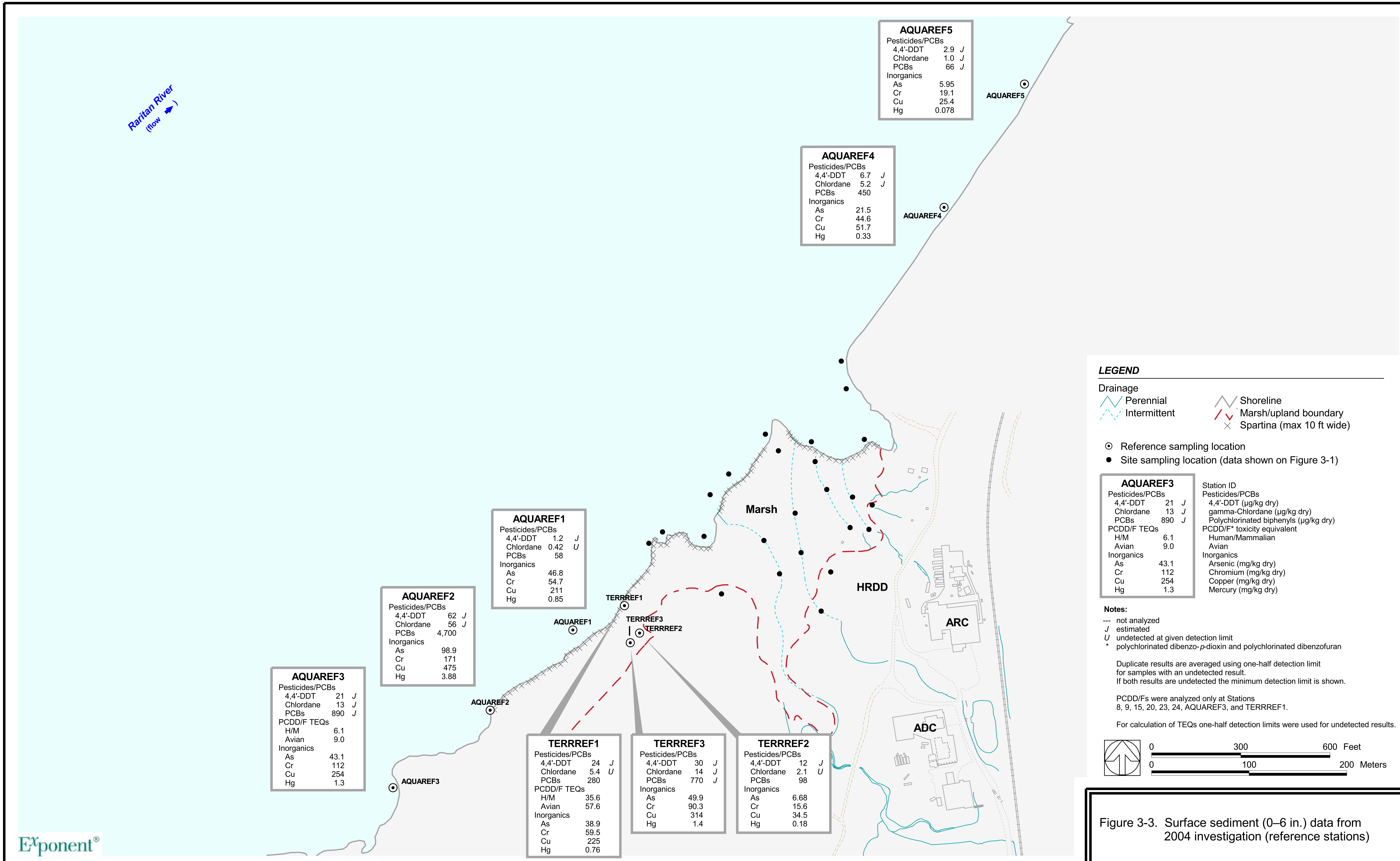


Figure 3-3. Surface sediment (0–6 in.) data from 2004 investigation (reference stations)

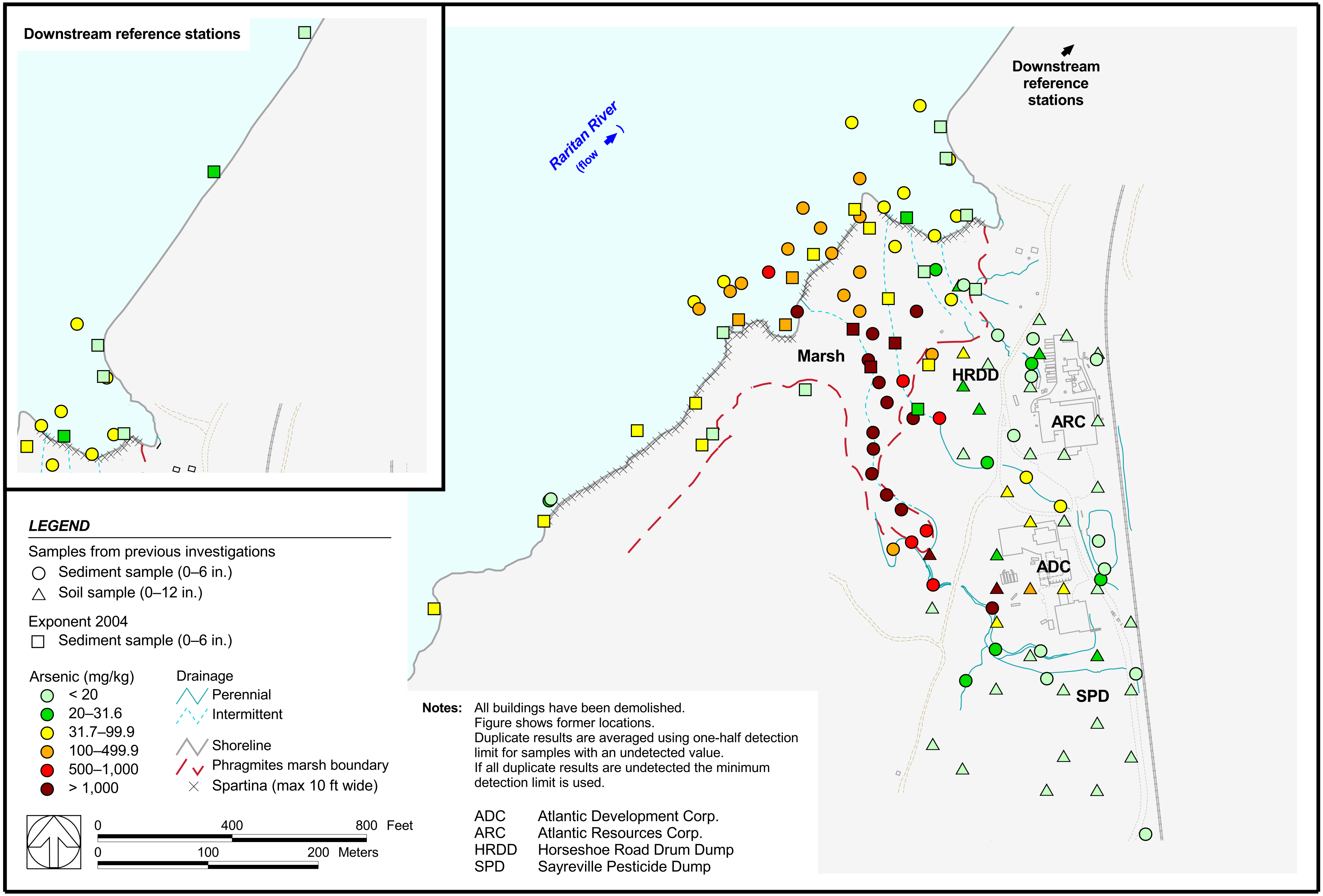


Figure 3-4. Arsenic concentrations in surface soil (0–12 in.) and sediment (0–6 in.) from historical and 2004 investigations

Exponent®

BE02578.001 1004 | May 11, 2006 | As/PCB sedt/soil point view | Fig 3-4 Arsenic point data layout | m:/be02578_sayreville/projects/sayerville_0506.apr

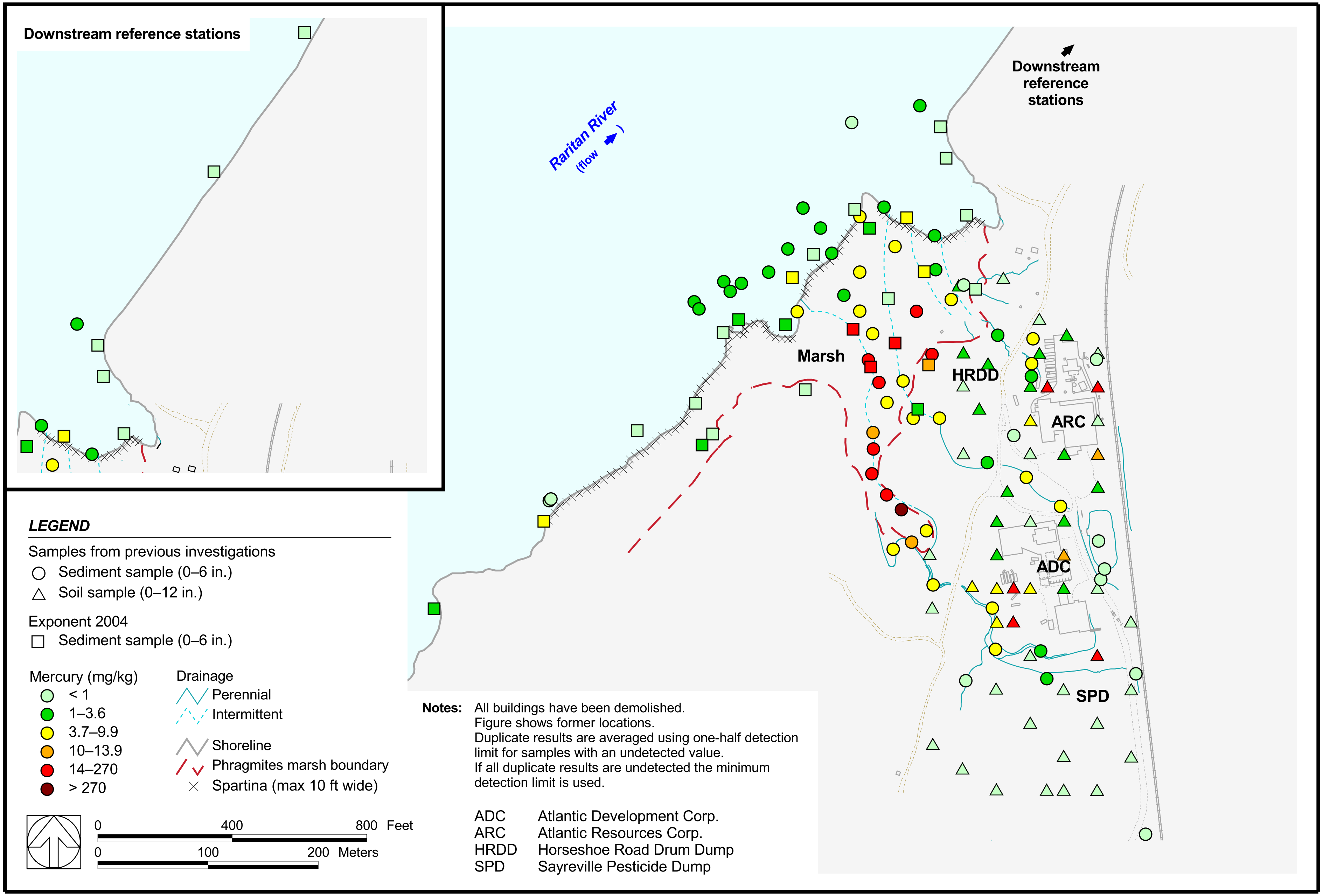


Figure 3-5. Mercury concentrations in surface soil (0–12 in.) and sediment (0–6 in.) from historical and 2004 investigations

BE02578.001 1004 | May 11, 2006 | As/PCB sedt/soil point view | Fig 3-5 Mercury point data layout | m:/be02578_sayreville/projects/sayerville_0506.apr

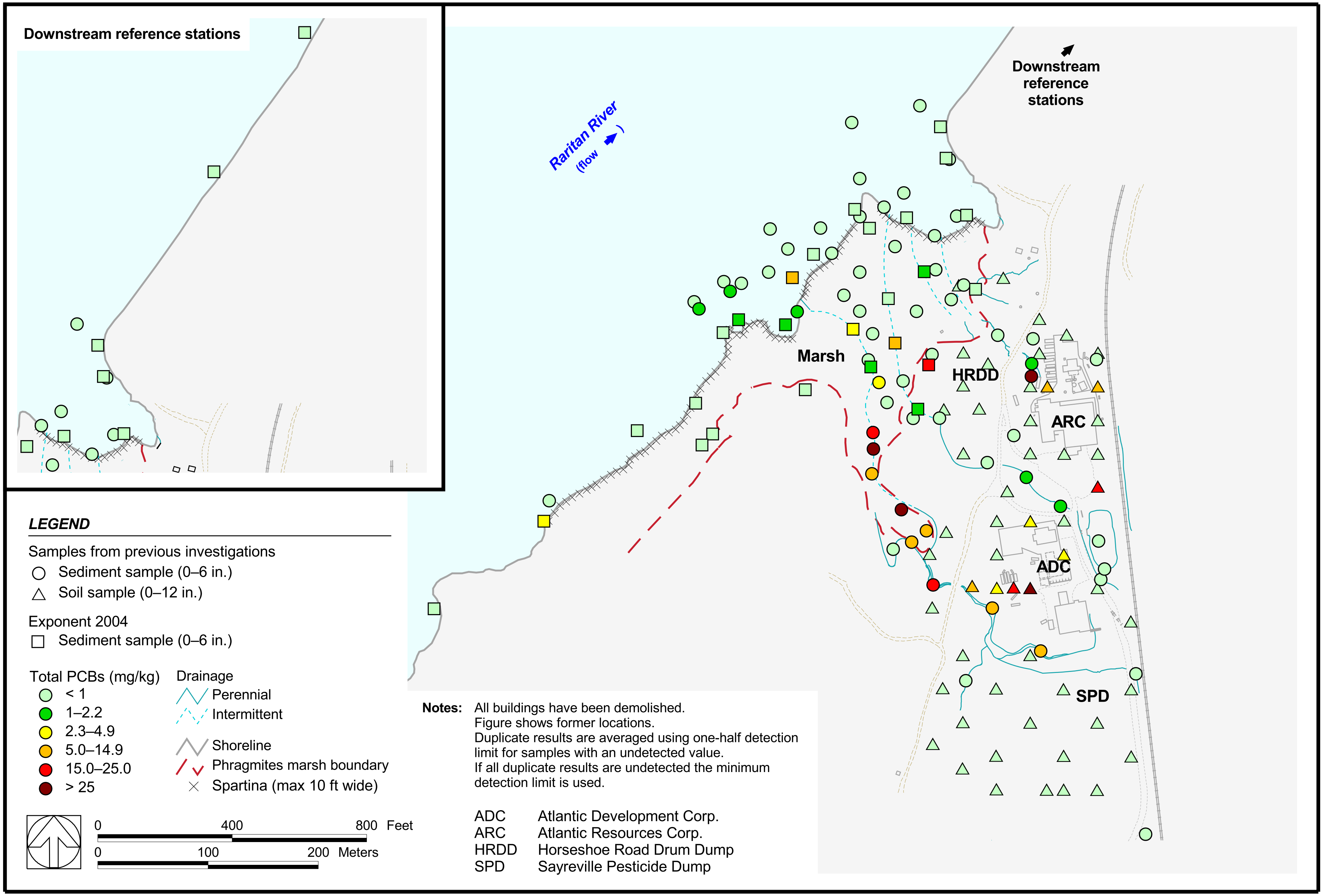
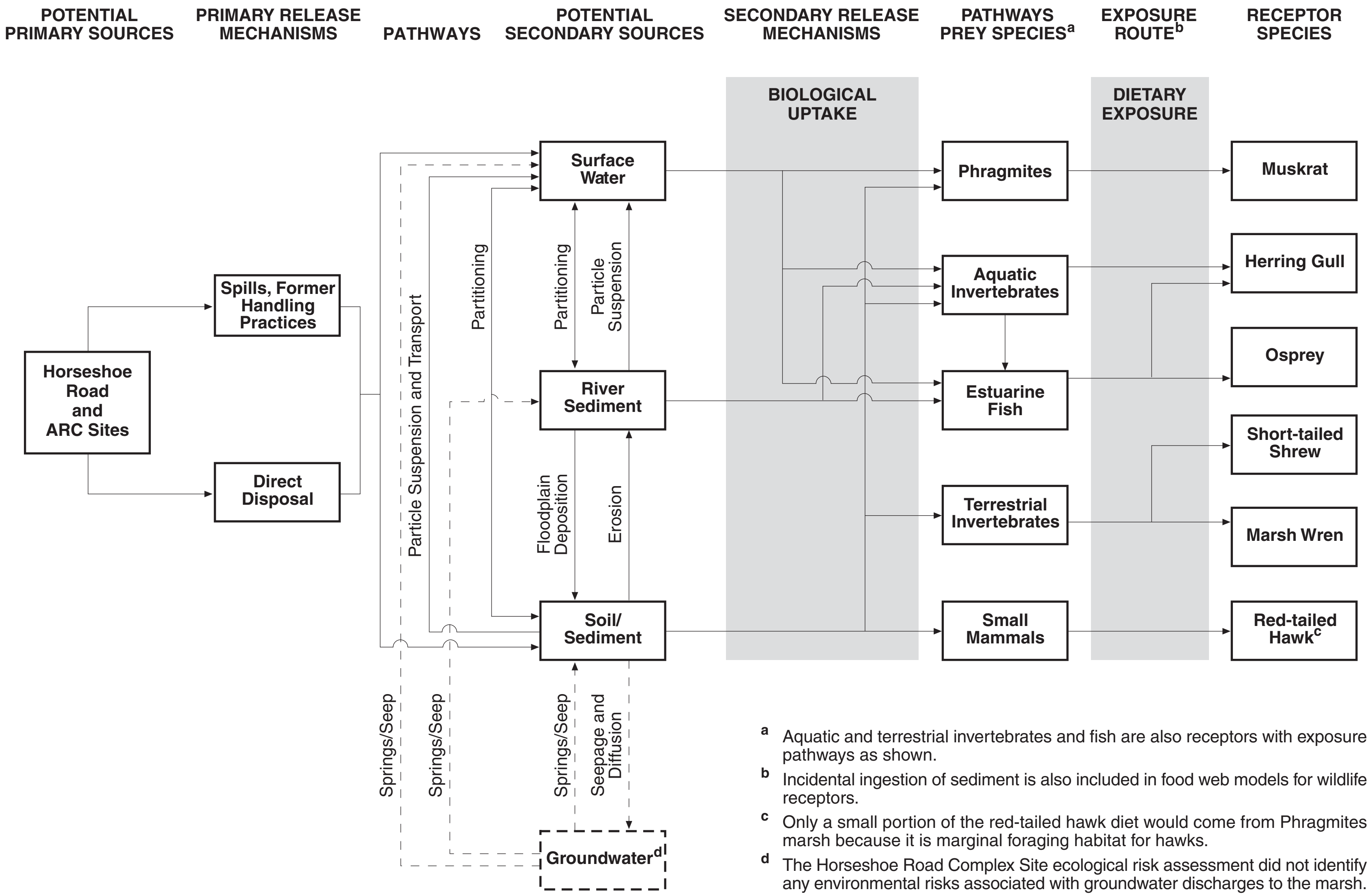


Figure 3-6. Total PCB concentrations in surface soil (0–12 in.) and sediment (0–6 in.) from historical and 2004 investigations

Exponent®



[a] Aquatic and terrestrial invertebrates and fish are also receptors with exposure pathways as shown.

[b] Incidental ingestion of sediment is also included in food web models for wildlife receptors.

[c] Only a small portion of the red-tailed hawk diet would come from Phragmites marsh because it is marginal foraging habitat for hawks.

[d] The Horseshoe Road Complex Site ecological risk assessment did not identify any environmental risks associated with groundwater discharges to the marsh.

Figure 4-1. Ecological conceptual site model

BE02578.001 1004 05/12/06 WA

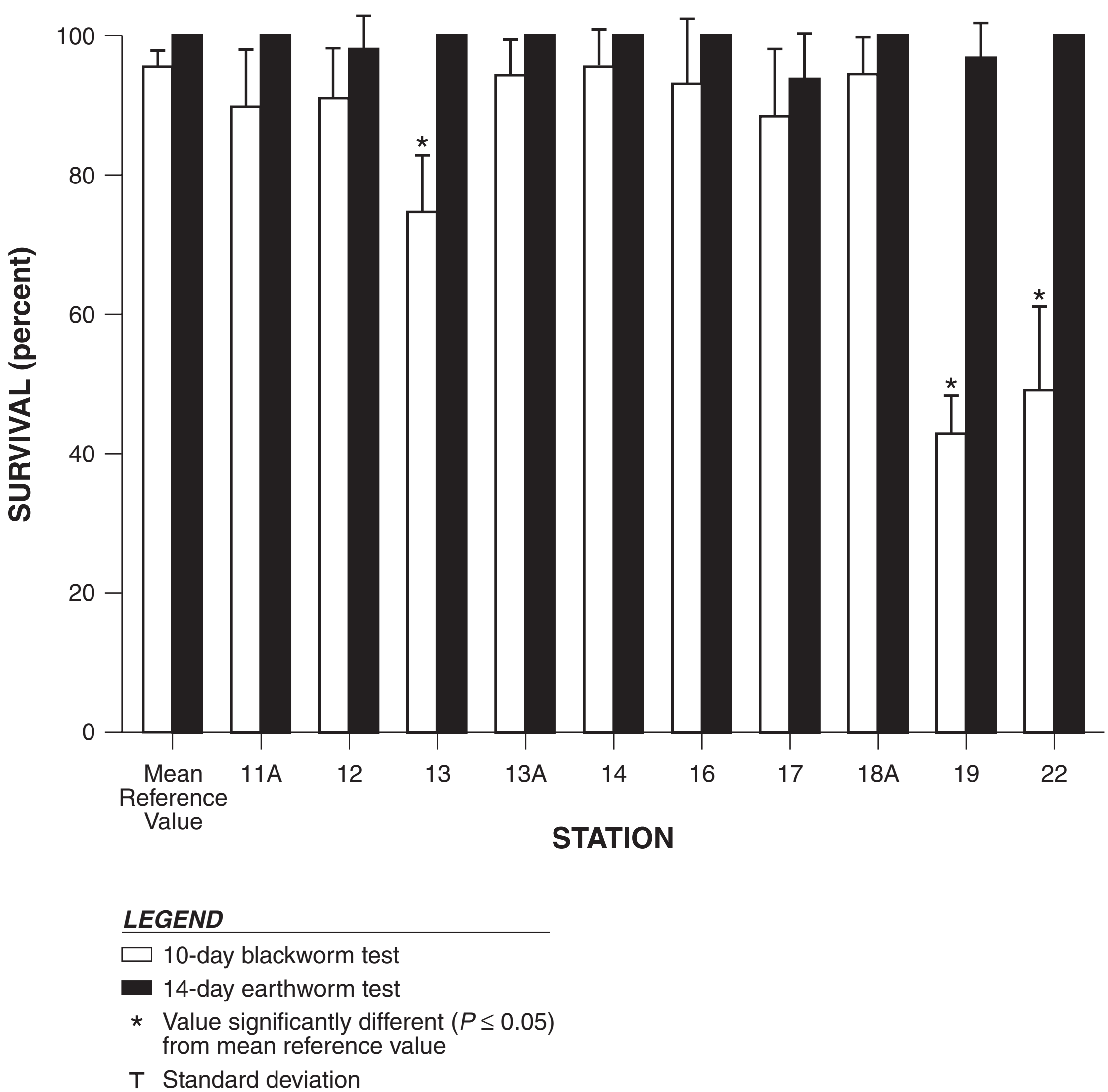


Figure 5-1. Summary of mean survival in the 10-day blackworm test and the 14-day earthworm test

BE02578.001 1004 05/12/06 WA

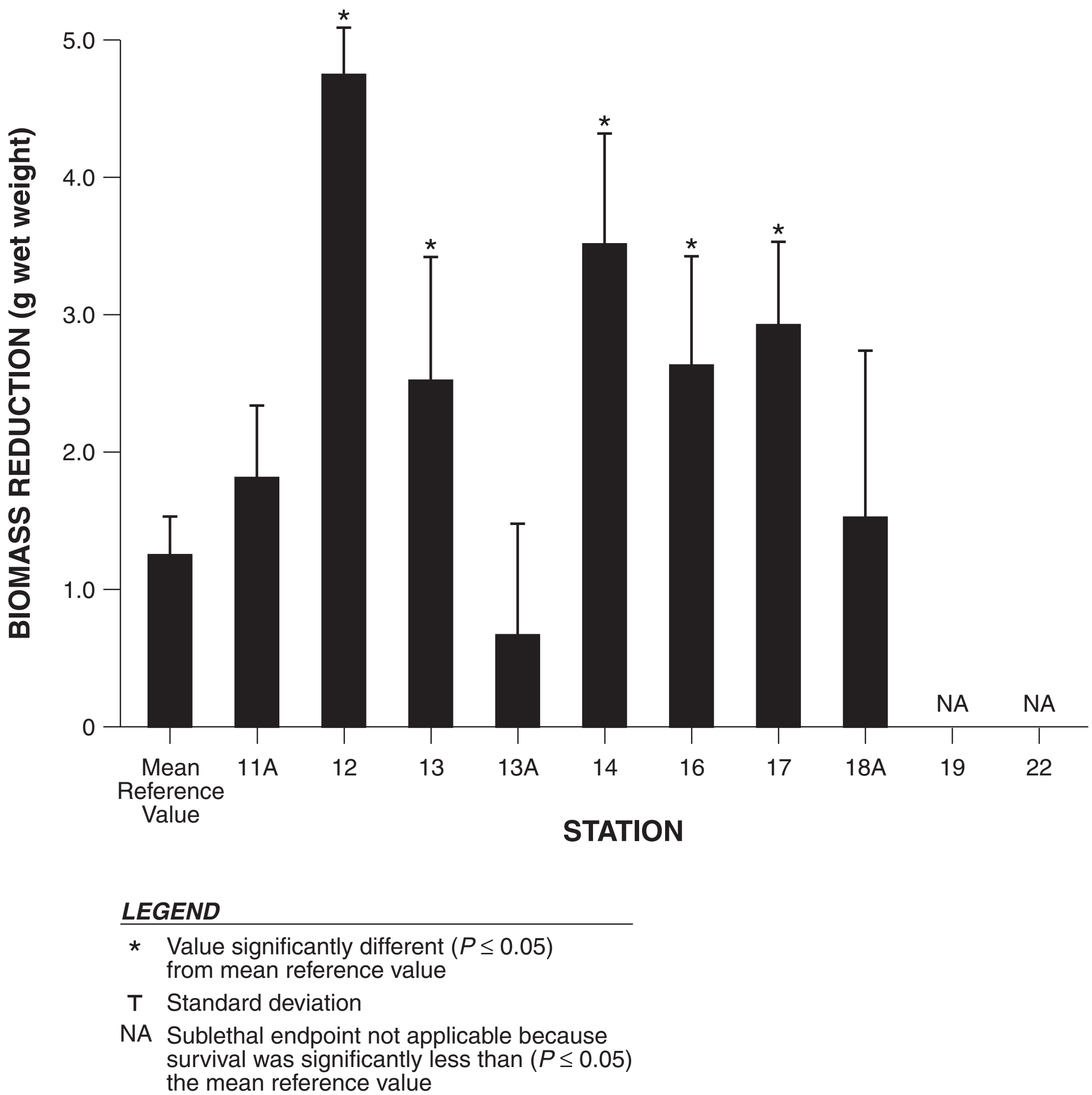


Figure 5-2. Summary of mean biomass reduction in the 28-day blackworm test

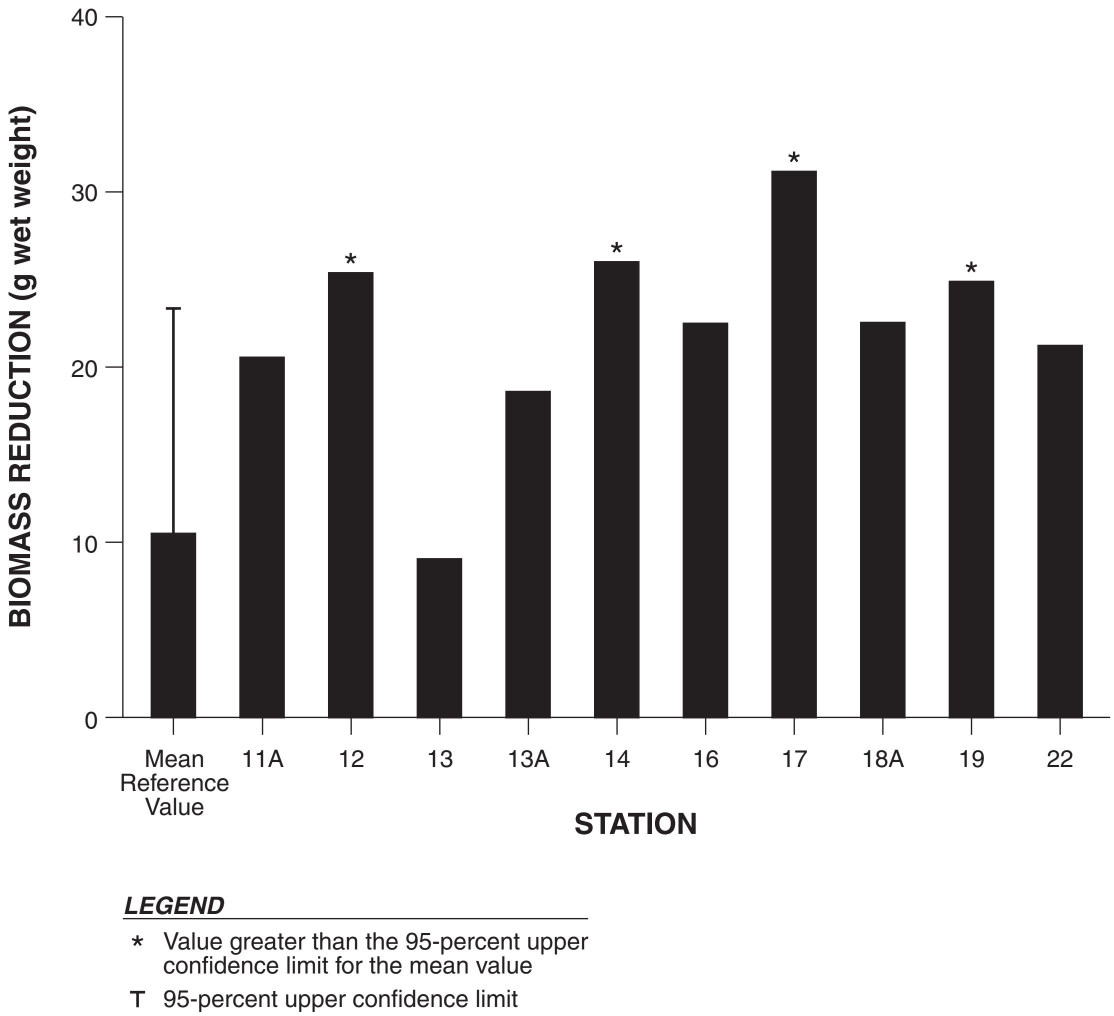


Figure 5-3. Summary of mean biomass reduction in the 28-day earthworm test

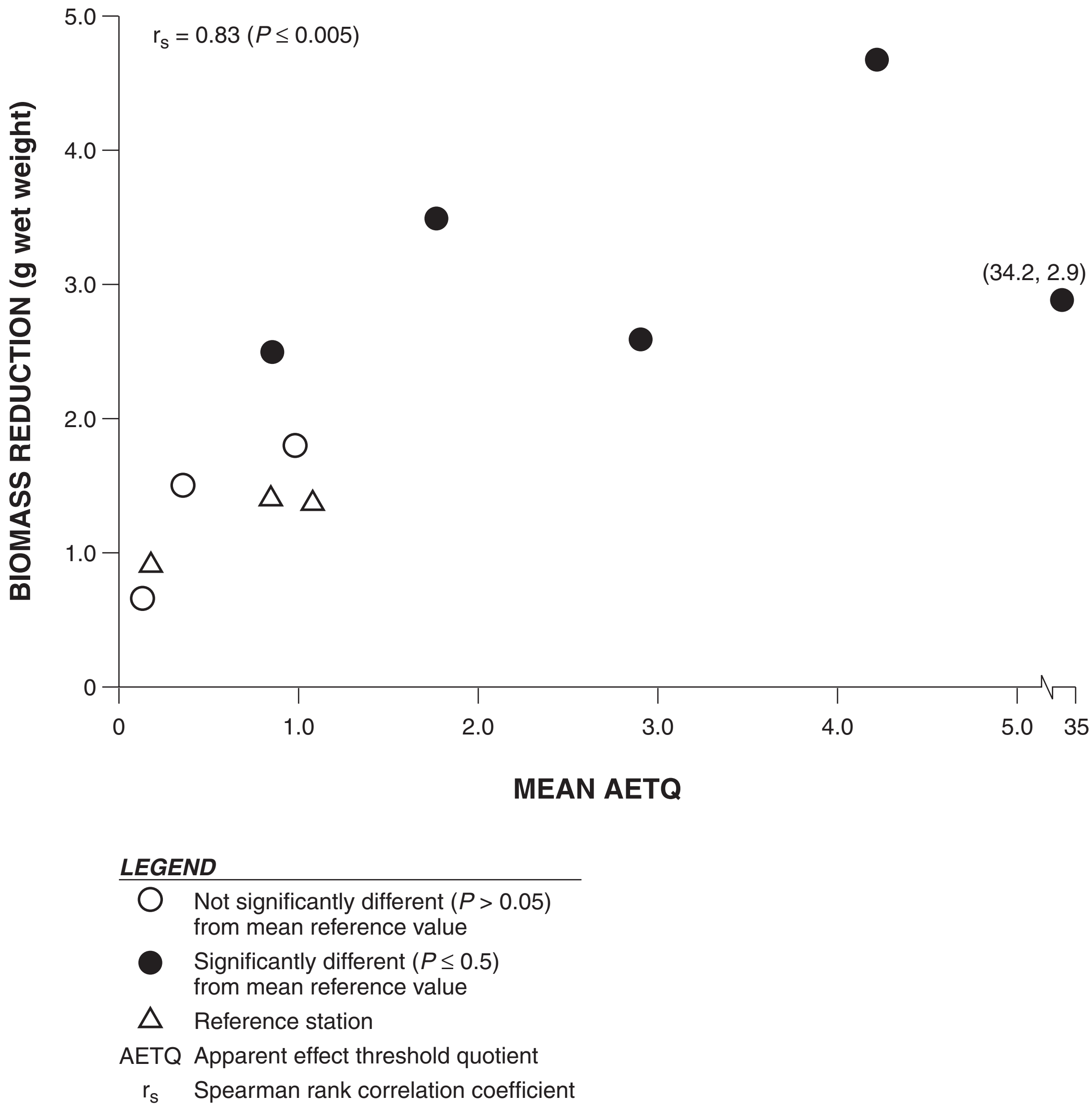


Figure 5-4. Comparison of mean AETQ with biomass reduction in the 28-day blackworm test

BE02578.001 1004 05/15/06 WA

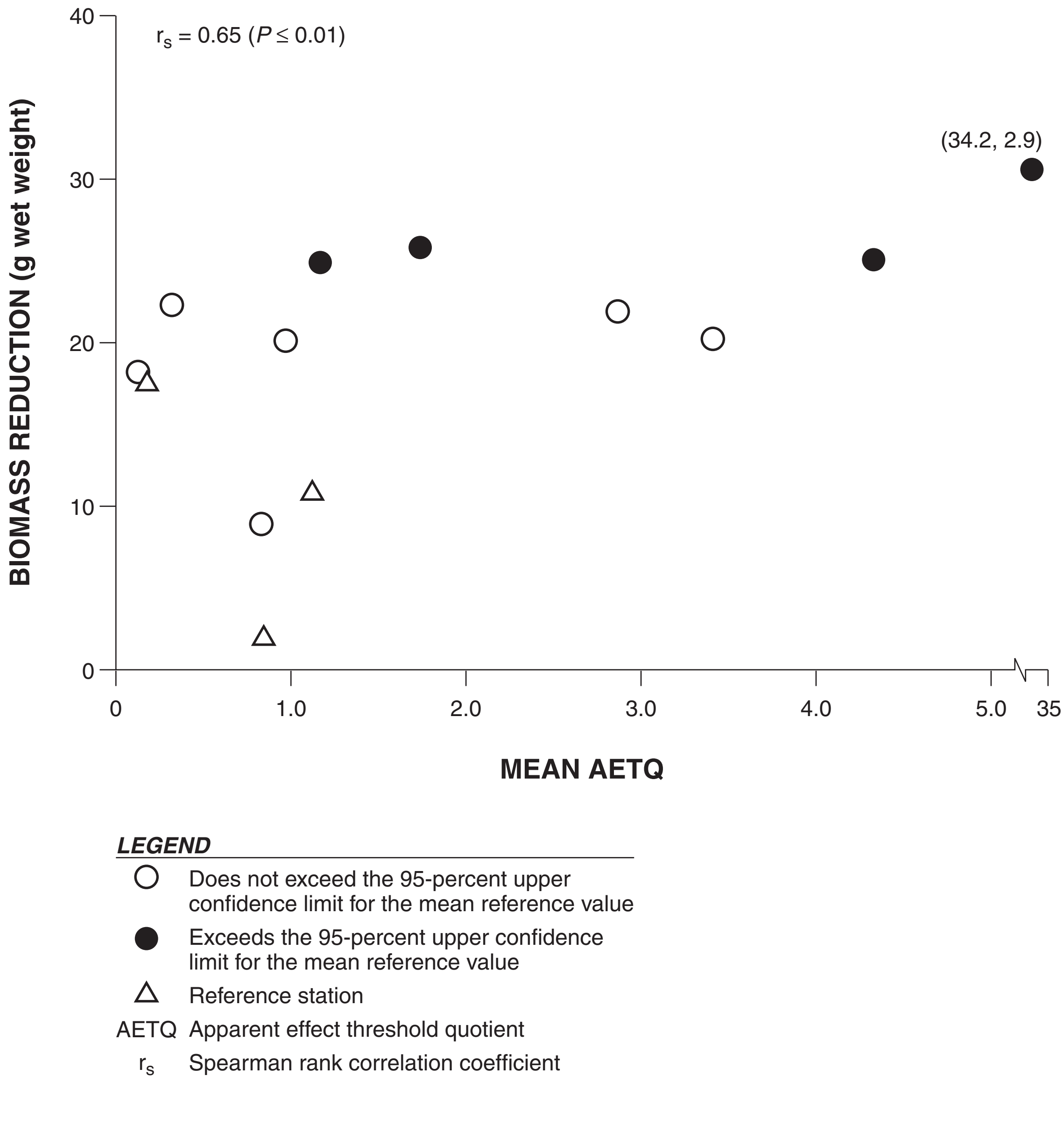


Figure 5-5. Comparison of mean AETQ with biomass reduction in the 28-day earthworm test

BE02578.001 1004 05/12/06 WA

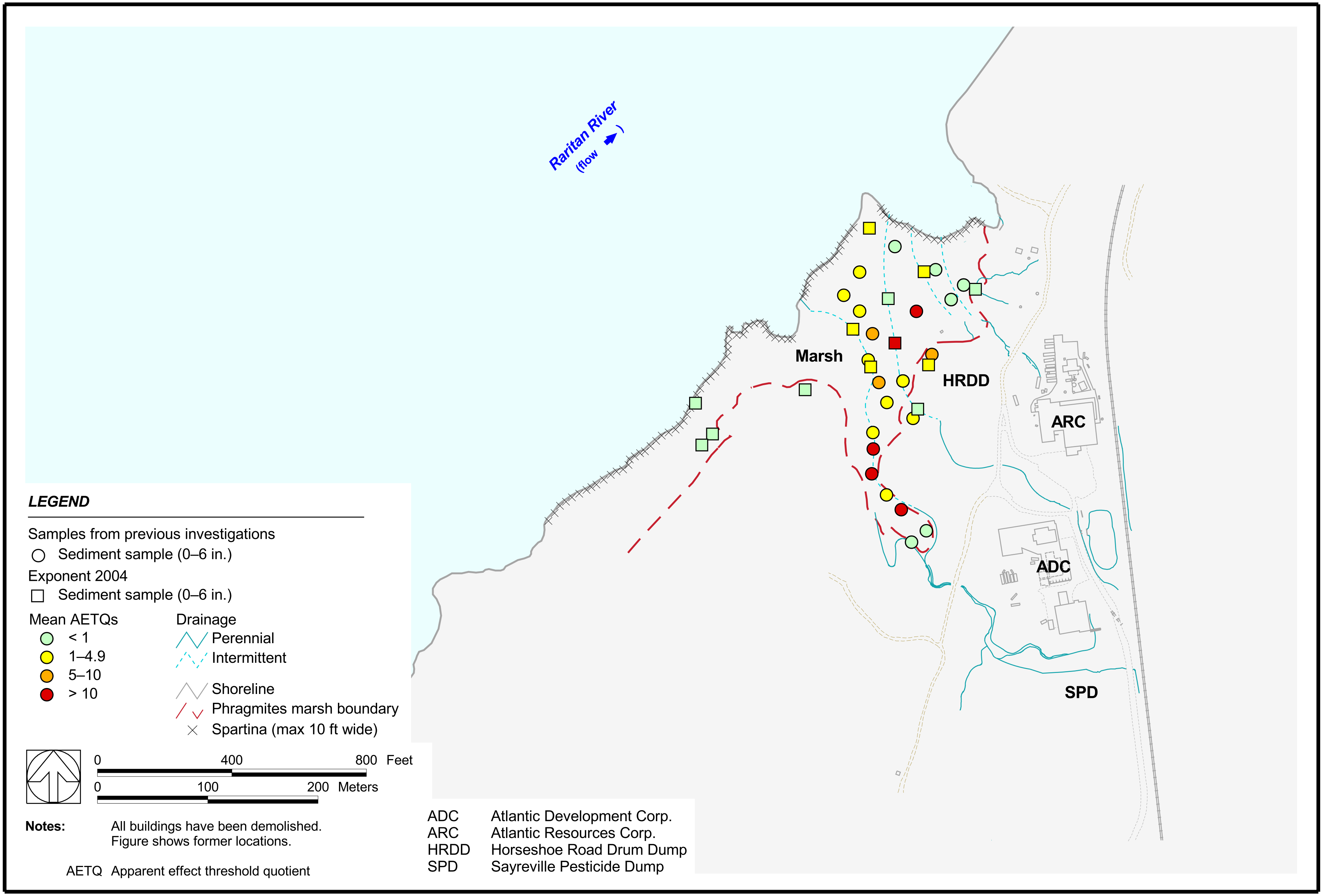


Figure 5-6. Mean AETQs at surface sediment stations from historical and 2004 investigations

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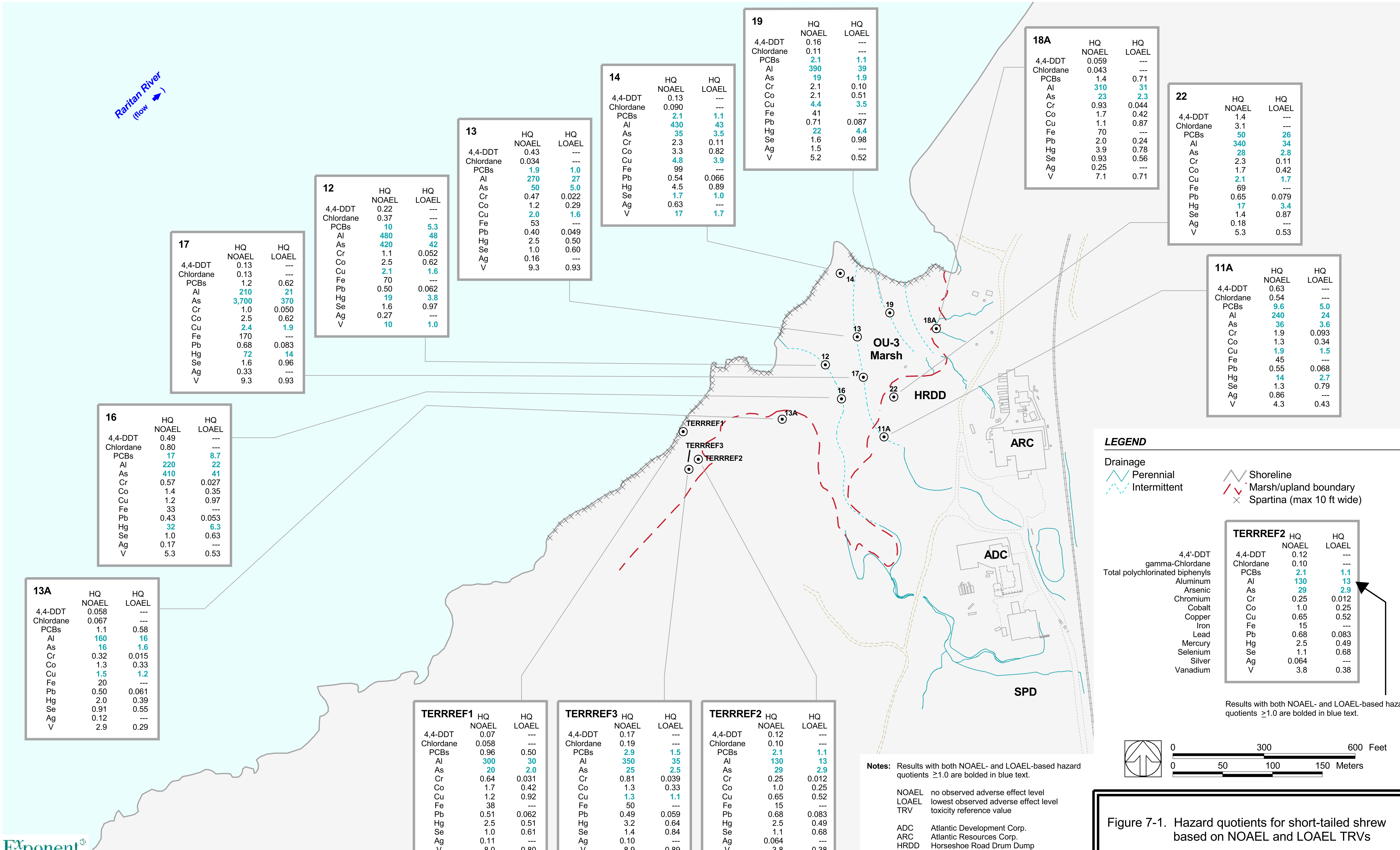
BE02578.001 1004 | May 15, 2006 | Fig 5-6 Mean AET point view | Fig 5-6 Mean AET ratio layout | m:/be02578_sayreville/projects/sayerville_0506.apr



19

	HQ NOAEL	HQ LOAEL
4,4-DDT	0.16	---
Chlordane	0.11	---
PCBs	2.1	1.1
Al	390	39
As	19	1.9
Cr	2.1	0.10
Co	2.1	0.51
Cu	4.4	3.5
Fe	41	---
Pb	0.71	0.087
Hg	22	4.4
Se	1.6	0.98
Ag	1.5	---
V	5.2	0.52

18A

	HQ NOAEL	HQ LOAEL
4,4-DDT	0.059	---
Chlordane	0.043	---
PCBs	1.4	0.71
Al	310	31
As	23	2.3
Cr	0.93	0.044
Co	1.7	0.42
Cu	1.1	0.87
Fe	70	---
Pb	2.0	0.24
Hg	3.9	0.78
Se	0.93	0.56
Ag	0.25	---
V	7.1	0.71

14

	HQ NOAEL	HQ LOAEL
4,4-DDT	0.13	---
Chlordane	0.090	---
PCBs	2.1	1.1
Al	430	43
As	35	3.5
Cr	2.3	0.11
Co	3.3	0.82
Cu	4.8	3.9
Fe	99	---
Pb	0.54	0.066
Hg	4.5	0.89
Se	1.7	1.0
Ag	0.63	---
V	17	1.7

13

	HQ NOAEL	HQ LOAEL
4,4-DDT	0.43	---
Chlordane	0.034	---
PCBs	1.9	1.0
Al	270	27
As	50	5.0
Cr	0.47	0.022
Co	1.2	0.29
Cu	2.0	1.6
Fe	53	---
Pb	0.40	0.049
Hg	2.5	0.50
Se	1.0	0.60
Ag	0.16	---
V	9.3	0.93

12

	HQ NOAEL	HQ LOAEL
4,4-DDT	0.22	---
Chlordane	0.37	---
PCBs	10	5.3
Al	480	48
As	420	42
Cr	1.1	0.052
Co	2.5	0.62
Cu	2.1	1.6
Fe	70	---
Pb	0.50	0.062
Hg	19	3.8
Se	1.6	0.97
Ag	0.27	---
V	10	1.0

17

	HQ NOAEL	HQ LOAEL
4,4-DDT	0.13	---
Chlordane	0.13	---
PCBs	1.2	0.62
Al	210	21
As	3,700	370
Cr	1.0	0.050
Co	2.5	0.62
Cu	2.4	1.9
Fe	170	---
Pb	0.68	0.083
Hg	72	14
Se	1.6	0.96
Ag	0.33	---
V	9.3	0.93

16

	HQ NOAEL	HQ LOAEL
4,4-DDT	0.49	---
Chlordane	0.80	---
PCBs	17	8.7
Al	220	22
As	410	41
Cr	0.57	0.027
Co	1.4	0.35
Cu	1.2	0.97
Fe	33	---
Pb	0.43	0.053
Hg	32	6.3
Se	1.0	0.63
Ag	0.17	---
V	5.3	0.53

13A

	HQ NOAEL	HQ LOAEL
4,4-DDT	0.058	---
Chlordane	0.067	---
PCBs	1.1	0.58
Al	160	16
As	16	1.6
Cr	0.32	0.015
Co	1.3	0.33
Cu	1.5	1.2
Fe	20	---
Pb	0.50	0.061
Hg	2.0	0.39
Se	0.91	0.55
Ag	0.12	---
V	2.9	0.29

22

	HQ NOAEL	HQ LOAEL
4,4-DDT	1.4	---
Chlordane	3.1	---
PCBs	50	26
Al	340	34
As	28	2.8
Cr	2.3	0.11
Co	1.7	0.42
Cu	2.1	1.7
Fe	69	---
Pb	0.65	0.079
Hg	17	3.4
Se	1.4	0.87
Ag	0.18	---
V	5.3	0.53

11A

	HQ NOAEL	HQ LOAEL
4,4-DDT	0.63	---
Chlordane	0.54	---
PCBs	9.6	5.0
Al	240	24
As	36	3.6
Cr	1.9	0.093
Co	1.3	0.34
Cu	1.9	1.5
Fe	45	---
Pb	0.55	0.068
Hg	14	2.7
Se	1.3	0.79
Ag	0.86	---
V	4.3	0.43

TERRREF1

	HQ NOAEL	HQ LOAEL
4,4-DDT	0.07	---
Chlordane	0.058	---
PCBs	0.96	0.50
Al	300	30
As	20	2.0
Cr	0.64	0.031
Co	1.7	0.42
Cu	1.2	0.92
Fe	38	---
Pb	0.51	0.062
Hg	2.5	0.51
Se	1.0	0.61
Ag	0.11	---
V	8.0	0.80

TERRREF3

	HQ NOAEL	HQ LOAEL
4,4-DDT	0.17	---
Chlordane	0.19	---
PCBs	2.9	1.5
Al	350	35
As	25	2.5
Cr	0.81	0.039
Co	1.3	0.33
Cu	1.3	1.1
Fe	50	---
Pb	0.49	0.059
Hg	3.2	0.64
Se	1.4	0.84
Ag	0.10	---
V	8.9	0.89

TERRREF2

	HQ NOAEL	HQ LOAEL
4,4-DDT	0.12	---
Chlordane	0.10	---
PCBs	2.1	1.1
Al	130	13
As	29	2.9
Cr	0.25	0.012
Co	1.0	0.25
Cu	0.65	0.52
Fe	15	---
Pb	0.68	0.083
Hg	2.5	0.49
Se	1.1	0.68
Ag	0.064	---
V	3.8	0.38

LEGEND

Drainage
- Perennial
- Intermittent
- Shoreline
- Marsh/upland boundary
- Spartina (max 10 ft wide)

TERRREF2

		HQ NOAEL	HQ LOAEL
4,4'-DDT	4,4-DDT	0.12	---
gamma-Chlordane	Chlordane	0.10	---
Total polychlorinated biphenyls	PCBs	2.1	1.1
Aluminum	Al	130	13
Arsenic	As	29	2.9
Chromium	Cr	0.25	0.012
Cobalt	Co	1.0	0.25
Copper	Cu	0.65	0.52
Iron	Fe	15	---
Lead	Pb	0.68	0.083
Mercury	Hg	2.5	0.49
Selenium	Se	1.1	0.68
Silver	Ag	0.064	---
Vanadium	V	3.8	0.38

Results with both NOAEL- and LOAEL-based hazard quotients ≥1.0 are bolded in blue text.

0 300 600 Feet
0 50 100 150 Meters

Notes: Results with both NOAEL- and LOAEL-based hazard quotients ≥1.0 are bolded in blue text.

NOAEL no observed adverse effect level
LOAEL lowest observed adverse effect level
TRV toxicity reference value

ADC Atlantic Development Corp.
ARC Atlantic Resources Corp.
HRDD Horseshoe Road Drum Dump
SPD Sayreville Pesticide Dump

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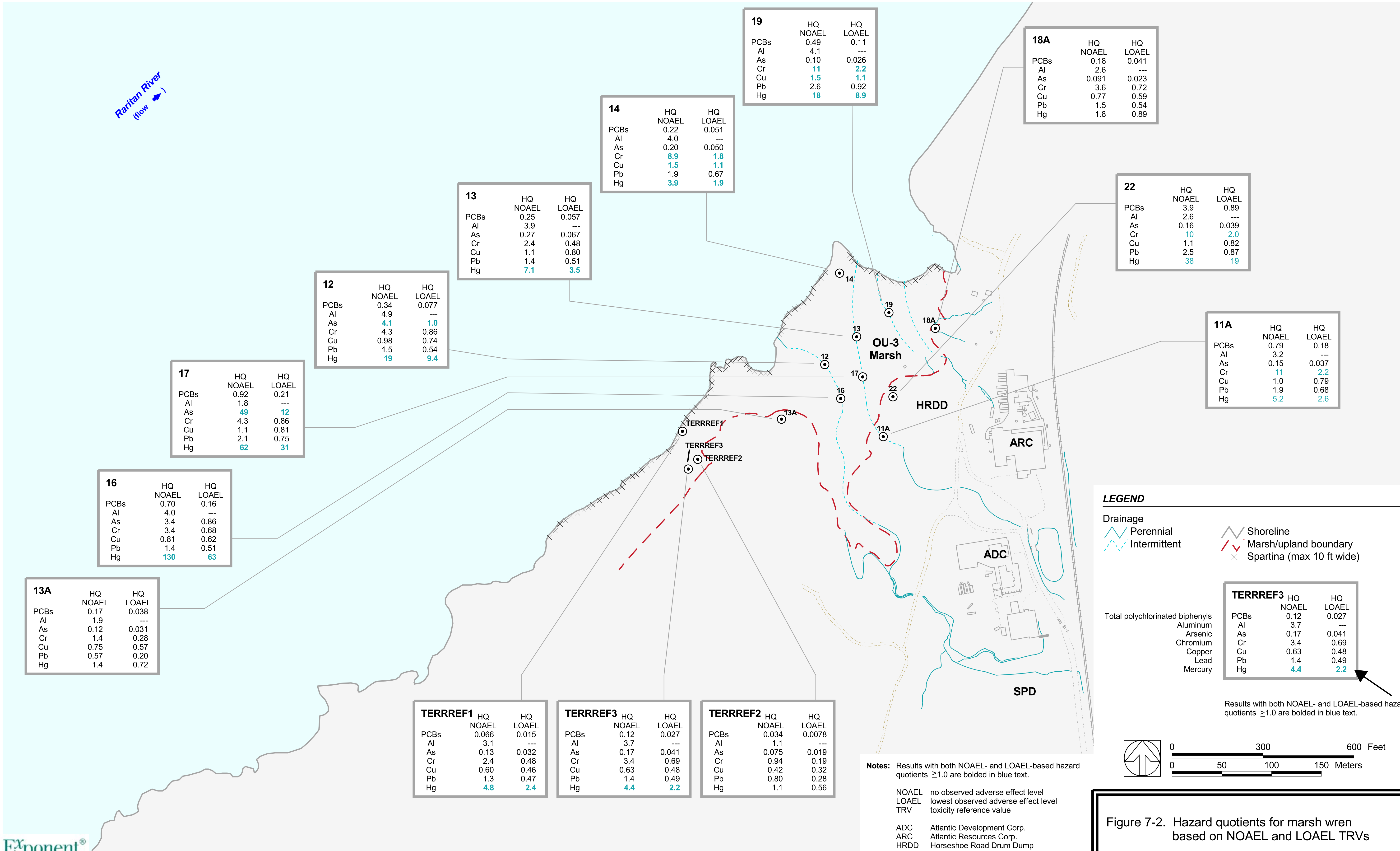
Figure 7-1. Hazard quotients for short-tailed shrew based on NOAEL and LOAEL TRVs

BE02578.001 1004 | May 11, 2006 | Hzd quotient view | Fig 7-1 Hzd quotient layout - shrew | m:/be02578_sayreville/projects/sayerville_0506.apr



19

	HQ NOAEL	HQ LOAEL
PCBs	0.49	0.11
Al	4.1	---
As	0.10	0.026
Cr	**11**	**2.2**
Cu	**1.5**	**1.1**
Pb	2.6	0.92
Hg	**18**	**8.9**

18A

	HQ NOAEL	HQ LOAEL
PCBs	0.18	0.041
Al	2.6	---
As	0.091	0.023
Cr	3.6	0.72
Cu	0.77	0.59
Pb	1.5	0.54
Hg	1.8	0.89

14

	HQ NOAEL	HQ LOAEL
PCBs	0.22	0.051
Al	4.0	---
As	0.20	0.050
Cr	**8.9**	**1.8**
Cu	**1.5**	**1.1**
Pb	1.9	0.67
Hg	**3.9**	**1.9**

22

	HQ NOAEL	HQ LOAEL
PCBs	3.9	0.89
Al	2.6	---
As	0.16	0.039
Cr	**10**	**2.0**
Cu	1.1	0.82
Pb	2.5	0.87
Hg	**38**	**19**

13

	HQ NOAEL	HQ LOAEL
PCBs	0.25	0.057
Al	3.9	---
As	0.27	0.067
Cr	2.4	0.48
Cu	1.1	0.80
Pb	1.4	0.51
Hg	**7.1**	**3.5**

12

	HQ NOAEL	HQ LOAEL
PCBs	0.34	0.077
Al	4.9	---
As	**4.1**	**1.0**
Cr	4.3	0.86
Cu	0.98	0.74
Pb	1.5	0.54
Hg	**19**	**9.4**

11A

	HQ NOAEL	HQ LOAEL
PCBs	0.79	0.18
Al	3.2	---
As	0.15	0.037
Cr	**11**	**2.2**
Cu	1.0	0.79
Pb	1.9	0.68
Hg	**5.2**	**2.6**

17

	HQ NOAEL	HQ LOAEL
PCBs	0.92	0.21
Al	1.8	---
As	**49**	**12**
Cr	4.3	0.86
Cu	1.1	0.81
Pb	2.1	0.75
Hg	**62**	**31**

16

	HQ NOAEL	HQ LOAEL
PCBs	0.70	0.16
Al	4.0	---
As	3.4	0.86
Cr	3.4	0.68
Cu	0.81	0.62
Pb	1.4	0.51
Hg	**130**	**63**

13A

	HQ NOAEL	HQ LOAEL
PCBs	0.17	0.038
Al	1.9	---
As	0.12	0.031
Cr	1.4	0.28
Cu	0.75	0.57
Pb	0.57	0.20
Hg	1.4	0.72

TERRREF1

	HQ NOAEL	HQ LOAEL
PCBs	0.066	0.015
Al	3.1	---
As	0.13	0.032
Cr	2.4	0.48
Cu	0.60	0.46
Pb	1.3	0.47
Hg	**4.8**	**2.4**

TERRREF3

	HQ NOAEL	HQ LOAEL
PCBs	0.12	0.027
Al	3.7	---
As	0.17	0.041
Cr	3.4	0.69
Cu	0.63	0.48
Pb	1.4	0.49
Hg	**4.4**	**2.2**

TERRREF2

	HQ NOAEL	HQ LOAEL
PCBs	0.034	0.0078
Al	1.1	---
As	0.075	0.019
Cr	0.94	0.19
Cu	0.42	0.32
Pb	0.80	0.28
Hg	1.1	0.56

TERRREF3 (legend example)

		HQ NOAEL	HQ LOAEL
Total polychlorinated biphenyls	PCBs	0.12	0.027
Aluminum	Al	3.7	---
Arsenic	As	0.17	0.041
Chromium	Cr	3.4	0.69
Copper	Cu	0.63	0.48
Lead	Pb	1.4	0.49
Mercury	Hg	**4.4**	**2.2**

Notes: Results with both NOAEL- and LOAEL-based hazard quotients ≥1.0 are bolded in blue text.

NOAEL no observed adverse effect level
LOAEL lowest observed adverse effect level
TRV toxicity reference value

ADC Atlantic Development Corp.
ARC Atlantic Resources Corp.
HRDD Horseshoe Road Drum Dump
SPD Sayreville Pesticide Dump

Figure 7-2. Hazard quotients for marsh wren based on NOAEL and LOAEL TRVs

Tables

Table 2-1. Statistical summary of marsh surface sediment data (1997–1999)

Analyte	Concentration Units	Number of Analyses	Number of Detected Values	Minimum Detected Value	Maximum Detected Value
Site Stations					
Arsenic	mg/kg	11	11	24.7	8,220
Chromium	mg/kg	20	20	19.9	4,950
Copper	mg/kg	20	20	19.6	4,040
Mercury	mg/kg	20	20	0.36	385
γ-Chlordane	µg/kg	11	0	--	--
4,4'-DDT	µg/kg	17	4	5.8	54
PCBs	µg/kg	20	18	170	32,000
TPAH	µg/kg	17	15	2,300	16,000
Trichloroethene	µg/kg	20	2	4	6
1,2,4-Trichlorobenzene	µg/kg	20	10	4	1,500

Note: PCB - polychlorinated biphenyl
TPAH - total polycyclic aromatic hydrocarbons

Table 2-2. Statistical summary of river surface sediment data (1997–1999)

Analyte	Concentration Units	Number of Analyses	Number of Detected Values	Minimum Detected Value	Maximum Detected Value
Site Stations					
Arsenic	mg/kg	17	17	35.3	2,200
Chromium	mg/kg	21	21	60.2	2,340
Copper	mg/kg	15	15	182	3,560
Mercury	mg/kg	17	17	0.95	7
γ-Chlordane	μg/kg	18	6	0.32	36
4,4'-DDT	μg/kg	21	3	15	22
PCBs	μg/kg	20	10	45	1,300
TPAH	μg/kg	22	22	4,700	29,000
Trichloroethene	μg/kg	22	0	--	--
1,2,4-Trichlorobenzene	μg/kg	22	1	2	2
Reference Stations					
Arsenic	mg/kg	4	4	3.2	41.8
Chromium	mg/kg	4	4	7.7	39.2
Copper	mg/kg	1	1	91.7	91.7
Mercury	mg/kg	4	3	0.27	0.75
γ-Chlordane	μg/kg	4	1	0.83	0.83
4,4'-DDT	μg/kg	4	2	1.5	3.2
PCB	μg/kg	3	1	59	59
TPAH	μg/kg	4	3	3,000	3,400
Trichloroethene	μg/kg	4	0	--	--
1,2,4-Trichlorobenzene	μg/kg	4	0	--	--

Note: PCB - polychlorinated biphenyl
TPAH - total polycyclic aromatic hydrocarbons

Table 2-3. PCDD/F TEQs in river surface sediment (1999)

Station	Date	Sample ID	Human/Mammalian TEQ (ng/kg)	Avian TEQ (ng/kg)
RSD07	10/8/1999	RSD07 (0–6)	109 *J*	176 *J*
RSD15	11/8/1999	RSD15 (0–6)	60.7 *J*	94.4 *J*
RSD17	10/8/1999	RSD17 (0–6)	36.3 *J*	59.5 *J*
RSD19	10/8/1999	RSD19 (0–6)	4.38 *J*	6.48 *J*
RSD21	10/8/1999	RSD21 (0–6)	103 *J*	162 *J*
RSD23	10/8/1999	RSD23 (0–6)	51.8 *J*	80.3 *J*

Note: PCDD/F - polychlorinated dibenzo-*p*-dioxin and polychlorinated dibenzofuran
TEF - toxicity equivalence factor
TEQ - toxicity equivalent
WHO - World Health Organization

PCDD/F TEQs based on WHO TEFs for humans/mammals and birds (Van den Berg et al. 1998).

One-half detection limits were used for undetected results.

RSD21 is a duplicate of RSD07.

Table 2-4. Concentrations of analytes detected in fiddler crab tissue[a] collected from the Raritan River adjacent to the Horseshoe Road site, Sayreville, New Jersey (May 31–June 4, 1991)

Analyte	Sample Location FC1[b]	FC2	FC3
Metals			
Aluminum	71	122	195
Arsenic	0.6 *U*	9.0	3.6
Barium	6.8	13.0	5.3 *U*
Cadmium	0.84	0.98	1.09
Calcium	17,200	31,489	11,600
Chromium	0.9 *U*	2.0	2.4
Copper	67	75	147
Iron	407	693	959
Lead	0.8	1.6	2.0
Magnesium	940	1,491	633
Manganese	5.8	9.2	10.5
Mercury	0.05 *U*	0.06	0.08
Potassium	1,903	1,566	1,664
Selenium	1.1	0.7	0.7
Silver	0.93	0.98	1.99
Sodium	2,776	2,199	2,483
Vanadium	1.2 *U*	2.2	2.3
Zinc	36	32	35
Semivolatile Organic Compound			
Di-*n*-butylphthalate	7,500 *JB*	10,000 *JB*	9,200 *JB*
Pesticides/PCBs			
δ-HCH	37 *U*	36 *J*	57
p,p'-DDE	448	355	451
p,p'-DDD	183	43 *U*	201
Aroclor® 1248	3,060	2,319	492 *U*
Aroclor® 1254	4,104	435 *U*	5,738

Note: Data as presented in Appendix D of CDM (2002b).

B - compound detected in laboratory blank
J - approximate value below method detection limit
PCB - polychlorinated biphenyl
U - undetected at indicated concentration

[a] Measurement basis (wet or dry) is unknown.

[b] Location FC1 was considered to be upstream of the site.

Table 3-1. Summary of sampling and analyses for Horseshoe Road/ARC OU-3 (2004)

Task	Number of Sample Locations	Number of Samples per Station	Field Duplicates	Total Number of Samples	Analyses[a]
Sediment Sampling					
Marsh Sediment[b]					
15-cm (0–6 in.) core (3 reference)	17	1	1	18	TCL SVOCs, VOCs, pesticides/PCBs, TAL metals, TOC, AVS/SEM, PCDD/Fs, pH, grain size, percent moisture (at 4 onsite and 1 reference station)
Intertidal River Sediment[c]					
15-cm (0–6 in.) core (5 reference)	15	1	1	16	TCL SVOCs, VOCs, pesticides/PCBs, TAL metals, TOC, AVS/SEM, PCDD/Fs, pH, grain size, percent moisture (at 4 onsite and 1 reference station)
Sediment Toxicity and Bioaccumulation Tests					
Marsh Sediment					
15-cm (0–6 in.) grab sample (3 reference)	13	1	0	13	Blackworm 10-day survival and 28-day bioaccumulation (ASTM 2000a; U.S. EPA 2000) earthworm percent weight change 14 days and survival and bioaccumulation 28 days (ASTM 2000b)
Tissue Sampling					
Crabs					
Whole-body composites (2 reference)	9	1	0	9	TCL SVOCs, TCL pesticides/PCBs, TAL metals, PCDD/Fs, percent moisture, percent lipids (at 2 onsite and 1 reference station)
Estuarine Fishes					
Whole-body composites (2 reference)	12	3[d]	0	35	TCL SVOCs, TCL pesticides/PCBs, TAL metals, PCDD/Fs, percent moisture, percent lipids (at 2 onsite and 1 reference station)
Plants					
Composite root and basal portion (1 reference)	6	1[e]	0	7	TCL SVOCs, TCL pesticides/PCBs, TAL metals, percent moisture
Terrestrial Invertebrates					
Composites (1 reference)	2	1	0	2	TCL pesticides/PCBs, TAL metals, percent moisture, percent lipids
Small Mammals					
Whole-body composites (1 reference)	5	1[f]	0	6	TCL SVOCs, TCL pesticides/PCBs, TAL metals, percent moisture, percent lipids
Blackworm[g]					
Whole-body composites (3 reference)	12	1	0	12	TCL pesticides/PCBs, TAL metals, percent moisture, percent lipids
Earthworm[h]					
Whole-body composites (3 reference	13	1	0	13	TCL SVOCs, TCL pesticides/PCBs, TAL metals, percent moisture, percent lipids

Note:
ARC - Atlantic Richfield Corporation
AVS/SEM - acid-volatile sulfide/simultaneously extracted metals
OU-3 - Operable Unit 3
PCDD/Fs - polychlorinated dibenzo*p*-dioxins and polychlorinated dibenzofuran
PCB - polychlorinated biphenyl
SVOC - semivolatile organic compound
TAL - target analyte list
TCL - target compound list
TCLP - toxicity characteristic leaching procedure
TOC - total organic carbon

[a] Because of sample mass constraints, some biota samples were not analyzed for all analytes. Insufficient mass precluded the analysis of TCL SVOCs in any terrestrial invertebrate or blackworm tissue samples.

[b] Co-located with toxicity testing samples, plus four additional marsh sediment samples analyzed for PCDD/Fs.

[c] Co-located with crab and estuarine fish stations, plus three additional reference intertidal river sediment samples.

[d] Two estuarine fish tissue samples were collected at Station AQUAREF4.

Table 3-1. (cont.)

[e] Two plant tissue samples were collected at Station 14.

[f] Two small mammal tissue samples were collected at Station 14A.

[g] Blackworm tissue was obtained from the bioaccumulation tests.

[h] Earthworm tissue was obtained from the bioaccumulation tests.

Table 3-2. World Health Organization TEFs for humans/mammals, birds, and fishes

Congener	Human/ Mammalian	Bird	Fish
2,3,7,8-TCDD	1	1	1
1,2,3,7,8-PeCDD	1	1	1
1,2,3,4,7,8-HxCDD	0.1	0.05	0.5
1,2,3,6,78-HxCDD	0.1	0.01	0.01
1,2,3,7,8,9-HxCDD	0.1	0.1	0.01
1,2,3,4,6,7,8-HpCDD	0.01	0.001	0.001
OCDD	0.0001	0.0001	0.0001
2,3,7,8-TCDF	0.1	1	0.05
1,2,3,7,8-PeCDF	0.05	0.1	0.05
2,3,4,7,8-PeCDF	0.5	1	0.5
1,2,3,4,7,8-HxCDF	0.1	0.1	0.1
1,2,3,6,7,8-HxCDF	0.1	0.1	0.1
1,2,3,7,8,9-HxCDF	0.1	0.1	0.1
2,3,4,6,7,8-HxCDF	0.1	0.1	0.1
1,2,3,4,6,7,8-HpCDF	0.01	0.01	0.01
1,2,3,4,7,8,9-HpCDF	0.01	0.01	0.01
OCDF	0.0001	0.0001	0.0001

Note: TEF - toxicity equivalence factor

TEFs as cited in Van den Berg et al. (1998).

Table 3-3. PCDD/F TEQs in river and marsh surface sediment (2004)

Station	Human/Mammalian TEQ (ng/kg)	Avian TEQ (ng/kg)
River		
8	2.3	4.2
8	3.2	5.0
9	3.3	4.8
AQUAREF3	6.0	9.0
Marsh		
15	21.6	33.0
20	11.2	16.8
23	8.1	11.6
24	3.3	6.0
TERRREF1	35.8	58.2

Note: PCDD/F - polychlorinated dibenzo-*p*-dioxin and polychlorinated dibenzofuran
TEF - toxicity equivalence factor
TEQ - toxicity equivalent
WHO - World Health Organization

PCDD/F TEQs based on WHO TEFs for humans/mammals and birds (Van den Berg et al. 1998).

One-half detection limits were used for undetected results.

Table 3-4. PCDD/F TEQs in estuarine fishes (2004)

Station	Date	Field Replicate	Fish TEQ (ng/kg wet)
8	10/7/2004	1	0.90 *J*
8	10/7/2004	2	0.93 *J*
8	10/7/2004	3	1.1 *J*
Average			1.0 *J*
9	10/7/2004	1	0.26 *J*
9	10/7/2004	2	0.99 *J*
9	10/7/2004	3	0.84 *J*
Average			0.70 *J*
AQUAREF1	10/7/2004	1	1.8 *J*
AQUAREF1	10/7/2004	2	1.5 *J*
AQUAREF1	10/7/2004	3	1.8 *J*
Average			1.7 *J*

Note: *J* - estimated
PCDD/F - polychlorinated dibenzo-*p*-dioxin and polychlorinated dibenzofuran
TEF - toxicity equivalence factor
TEQ - toxicity equivalent
WHO - World Health Organization

PCDD/F TEQs based on WHO TEFs for fishes (Van den Berg et al. 1998).

One-half detection limits were used for undetected results.

Table 4-1. CoPCs evaluated in food-web exposure models

Analyte	Shrew[a]	Wren	Muskrat	Hawk	Osprey	Gull
Inorganic Compounds						
Aluminum	x	x	x	x	x	x
Antimony	x	x	x	x	x	x
Arsenic	x	x	x	x	x	x
Barium	x	x	x	x	x	x
Beryllium	x	x	x	x	x	x
Cadmium	x	x	x	x	x	x
Chromium	x	x	x	x	x	x
Cobalt	x	x	x	x	x	x
Copper	x	x	x	x	x	x
Iron	x	x	x	x	x	x
Lead	x	x	x	x	x	x
Manganese	x	x	x	x	x	x
Mercury	x	x	x	x	x	x
Nickel	x	x	x	x	x	x
Selenium	x	x	x	x	x	x
Silver	x	x	x	x	x	x
Thallium	x	x	x	x	x	x
Vanadium	x	x	x	x	x	x
Zinc	x	x	x	x	x	x
Calcium	x	x	x	x	x	x
Magnesium	x	x	x	x	x	x
Potassium	x	x	x	x	x	x
Sodium	x	x	x	x	x	x
SVOCs			x	x	x	x
2,4,5-Trichlorophenol			x	x	x	x
2,4,6-Trichlorophenol			x	x	x	x
2,4-Dichlorophenol			x	x	x	x
2,4-Dimethylphenol			x	x	x	x
2,4-Dinitrophenol			x	x	x	x
2,4-Dinitrotoluene			x	x	x	x
2,6-Dinitrotoluene			x	x	x	x
2-Chloronaphthalene			x	x	x	x
2-Chlorophenol			x	x	x	x
2-Methyl-4,6-dinitrophenol			x	x	x	x
2-Methylnaphthalene			x	x	x	x
2-Methylphenol			x	x	x	x
2-Nitroaniline			x	x	x	x
2-Nitrophenol			x	x	x	x
3,3'-Dichlorobenzidine			x	x	x	x
3-Nitroaniline			x	x	x	x
4-Bromophenyl ether			x	x	x	x
4-Chloro-3-methylphenol			x	x	x	x
4-Chloroaniline			x	x	x	x
4-Chlorophenyl-phenyl ether			x	x	x	x
4-Methylphenol			x	x	x	x
4-Nitroaniline			x	x	x	x
4-Nitrophenol			x	x	x	x
Acenaphthene			x	x	x	x
Acenaphthylene			x	x	x	x

Table 4-1. (cont.)

Analyte	Shrew[a]	Wren	Muskrat	Hawk	Osprey	Gull
Acetophenone			x	x	x	x
Anthracene			x	x	x	x
Atrazine			x	x	x	x
Benz[a]anthracene			x	x	x	x
Benzaldehyde			x	x	x	x
Benzo[a]pyrene			x	x	x	x
Benzo[b]fluoranthene			x	x	x	x
Benzo[ghi]perylene			x	x	x	x
Benzo[k]fluoranthene			x	x	x	x
Biphenyl			x	x	x	x
bis[2-chloroethoxy]methane			x	x	x	x
bis[2-chloroethyl]ether			x	x	x	x
Bis[2-chloroisopropyl]ether			x	x	x	x
bis[2-Ethylhexyl]phthalate			x	x	x	x
Butylbenzyl phthalate			x	x	x	x
Caprolactam			x	x	x	x
Carbazole			x	x	x	x
Chrysene			x	x	x	x
Dibenz[a,h]anthracene			x	x	x	x
Dibenzofuran			x	x	x	x
Diethyl phthalate			x	x	x	x
Dimethyl phthalate			x	x	x	x
Di-*n*-butyl phthalate			x	x	x	x
Di-*n*-octyl phthalate			x	x	x	x
Fluoranthene			x	x	x	x
Fluorene			x	x	x	x
Hexachlorobenzene			x	x	x	x
Hexachlorobutadiene			x	x	x	x
Hexachlorocyclopentadiene			x	x	x	x
Hexachloroethane			x	x	x	x
Indeno[1,2,3-cd]pyrene			x	x	x	x
Isophorone			x	x	x	x
Naphthalene			x	x	x	x
Nitrobenzene			x	x	x	x
N-nitroso-di-*n*-propylamine			x	x	x	x
N-nitrosodiphenylamine			x	x	x	x
Pentachlorophenol			x	x	x	x
Phenanthrene			x	x	x	x
Phenol			x	x	x	x
Pyrene			x	x	x	x
TPAH			x	x	x	x
Pesticides/PCBs						
4,4'-DDD	x	x	x	x	x	x
4,4'-DDE	x	x	x	x	x	x
4,4'-DDT	x	x	x	x	x	x
Aldrin	x	x	x	x	x	x
α-Chlordane	x	x	x	x	x	x
α-Endosulfan	x	x	x	x	x	x
α-Hexachlorocyclohexane	x	x	x	x	x	x
β-Endosulfan	x	x	x	x	x	x

Table 4-1. (cont.)

Analyte	Shrew[a]	Wren	Muskrat	Hawk	Osprey	Gull
β-Hexachlorocyclohexane	x	x	x	x	x	x
δ-Hexachlorocyclohexane	x	x	x	x	x	x
Dieldrin	x	x	x	x	x	x
Endosulfan sulfate	x	x	x	x	x	x
Endrin	x	x	x	x	x	x
Endrin aldehyde	x	x	x	x	x	x
Endrin ketone	x	x	x	x	x	x
γ-Chlordane	x	x	x	x	x	x
γ-Hexachlorocyclohexane	x	x	x	x	x	x
Heptachlor	x	x	x	x	x	x
Heptachlor epoxide	x	x	x	x	x	x
Methoxychlor	x	x	x	x	x	x
Toxaphene	x	x	x	x	x	x
PCBs	x	x	x	x	x	x
Dioxins/Furans						
2,3,7,8-Tetrachlorodibenzo-*p*-dioxin					x	x
1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin					x	x
1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin					x	x
1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin					x	x
1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin					x	x
1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin					x	x
Octachlorodibenzo-*p*-dioxin					x	x
2,3,7,8-Tetrachlorodibenzofuran					x	x
1,2,3,7,8-Pentachlorodibenzofuran					x	x
2,3,4,7,8-Pentachlorodibenzofuran					x	x
1,2,3,4,7,8-Hexachlorodibenzofuran					x	x
1,2,3,6,7,8-Hexachlorodibenzofuran					x	x
2,3,4,6,7,8-Hexachlorodibenzofuran					x	x
1,2,3,7,8,9-Hexachlorodibenzofuran					x	x
1,2,3,4,6,7,8-Heptachlorodibenzofuran					x	x
1,2,3,4,7,8,9-Heptachlorodibenzofuran					x	x
Octachlorodibenzofuran					x	x
Dioxin/furan TCDD toxicity equivalent					x	x

Note: CoPC - chemical of potential concern
PCB - polychlorinated biphenyl
SVOC - semivolatile organic compound
TCDD - tetrachlorodibenzo-*p*-dioxin
TPAH - total polycyclic aromatic hydrocarbons

[a] SVOCs evaluated for shrews at Station 13 and Terrestrial Reference Stations 1 and 3 only.

Table 5-1. Summary of 2004 sediment toxicity results and comparisons of results at OU-3 stations with pooled reference results

	Blackworm Tests		Earthworm Tests		
	10-day Survival[a] (percent)	28-day Biomass Reduction[a] (g wet weight)	14-day Survival (percent)	Biomass Reduction (g wet weight) 14-day[a]	Biomass Reduction (g wet weight) 28-day[b]
Study Site					
11A	90 (7.6)	1.8 (0.5)	100 (0)	–5.5 (9.6)	20.4
12	91 (8.3)	4.7[c] (0.9)	98 (5.0)	–28.0 (18.3)	25.3 [d]
13	75[c] (7.6)	2.5[c] (0.9)	100 (0)	5.9 (1.6)	9.1
13A	95 (5.3)	0.6 (0.8)	100 (0)	–1.1 (0.3)	18.6
14	96 (5.2)	3.5[c] (0.8)	100 (0)	–6.3 (2.2)	26.1 [d]
16	94 (9.2)	2.6[c] (0.7)	100 (0)	–0.9 (0.2)	22.3
17	89 (9.9)	2.9[c] (0.5)	95 (5.8)	–28.8 (17.2)	30.9 [d]
18A	100 (13.1)	1.5 (1.3)	100 (0)	2.0 (2.5)	22.4
19	43[c] (4.6)	1.6[e] (1.0)	98 (5.0)	–1.4 (16.9)	24.9 [d]
22	50[c] (12.0)	2.3[e] (0.7)	100 (0)	11.6[c] (4.7)	20.7
Reference Areas					
REF1	94 (11.9)	1.4 (0.9)	100 (0)	5.3 (3.8)	2.5
REF2	98 (4.6)	0.9 (1.3)	100 (0)	–7.3 (0.8)	17.6
REF3	95 (7.6)	1.4 (1.0)	100 (0)	–11.4 (2.1)	11.0
Mean	95 (8.3)	1.3 (1.0)	100 (0)	–4.5 (7.8)	10.4 (7.6)

Note: OU-3 - Operable Unit 3

[a] Values are means, with standard deviations presented in parentheses.

[b] A single unreplicated value was determined for each station.

[c] Value differs significantly ($P \leq 0.05$) from mean value of pooled reference results.

[d] Value exceeds 95-percent upper confidence limit of mean value for pooled reference results.

[e] Although this value did not differ significantly ($P > 0.05$) from the pooled reference results, it was not used to characterize sublethal toxicity because the reduced numbers of organisms in the test chambers may have biased or influenced the growth of the survivors.

Table 5-2. Screening of 2004 marsh sediment data against ERMs, PECs, and SELs

Survey Station	Date	Arsenic (mg/kg dry)	Cadmium (mg/kg dry)	Chromium (mg/kg dry)	Copper (mg/kg dry)	Iron (mg/kg dry)	Lead (mg/kg dry)	Manganese (mg/kg dry)	Mercury (mg/kg dry)	Nickel (mg/kg dry)	Silver (mg/kg dry)
11A	9/29/2004	31.6	2.97	311	481	31,800	238	141	2.17	54.8 *J*	48.2
12	10/4/2004	1,470	3.03	105	246	35,700	169	237	10.3	31.6 *J*	6.20
13	10/4/2004	67.5	0.20	47.1	338	37,000	146	225	0.49	15.4 *J*	3.89
13A	9/28/2004	9.34	0.14	13.9	14.2	10,000	38.8	41.6	0.047	2.6 *J*	0.50
14	10/4/2004	43.2	1.1	245	1,150	50,700	197	1,440	1.58	60.9 *J*	23.6
16	9/29/2004	1,050	0.56	77.1	104	23,900	157	230	10.4	15.7 *J*	3.99
17	10/4/2004	17,800	3.33	108	419	102,000	241	769	36.6	74.1 *J*	12.4
18A	9/28/2004	12.0	0.11	78.4	49.0	55,700	124	57.4	0.23	4.37 *J*	4.82
19	9/29/2004	16.6	1.0	310	1,150	29,400	319	155	5.0	28.0 *J*	133
22	9/28/2004	34.3	3.96	280	514	48,000	263	289	6.8	46.0 *J*	6.46
TERRREF1	9/28/2004	38.9	1.8	59.5	207	22,400	156	677	0.45	21.1 *J*	3.84
TERRREF2	10/4/2004	6.68	0.079	15.6	35.3	7,530	92	29.4	0.10	3.06 *J*	1.3
TERRREF3	10/4/2004	49.9	2.44	90.3	280	32,300	159	374	0.7	26.8 *J*	4.63
Screening Value											
PEC		33	4.98	111	149	NA	128	NA	1.06	48.6	NA
ERM		70	9.6	370	270	NA	218	NA	0.71	51.6	3.7
SEL		33	10	110	110	40,000	250	1,100	2	75	NA

Table 5-2. (cont.)

Survey Station	Date	Zinc (mg/kg dry)	Acenaphthene (µg/kg dry)	Acenaph-thylene (µg/kg dry)	Anthracene (µg/kg dry)	Benz[a] anthracene (µg/kg dry)	Benzo[a] pyrene (µg/kg dry)	Dibenz[a,h] anthracene (µg/kg dry)	2-Methyl-naphthalene (µg/kg dry)	Chrysene (µg/kg dry)	Fluorene (µg/kg dry)
11A	9/29/2004	96	1.3 *UJ*	5.8	12	21	24	5.8 *J*	9.6	23	2.1 *U*
12	10/4/2004	451	4.1 *U*	18 *J*	18 *J*	56	68	16 *J*	16 *J*	63	7.0 *U*
13	10/4/2004	69.8	2.3 *J*	6.9 *J*	7.5 *J*	38	56	18	8.1 *J*	56	3.5 *U*
13A	9/28/2004	38.5	5.7 *U*	8.9 *J*	16 *J*	57 *J*	61	23 *J*	6.9 *U*	79	9.7 *U*
14	10/4/2004	308	4.6 *UJ*	11 *J*	11 *J*	35 *J*	44 *J*	12 *J*	10 *J*	50 *J*	7.8 *UJ*
16	9/29/2004	177	4.0 *J*	36	28	120	150	26	20	150	6.4 *J*
17	10/4/2004	413	4.4 *U*	12 *J*	13 *J*	38	50	12 *J*	15 *J*	50	7.4 *U*
18A	9/28/2004	34.4	24 *U*	34 *U*	34 *U*	34 *U*	38 *U*	53 *U*	29 *U*	34 *U*	41 *U*
19	9/29/2004	139	3.7 *UJ*	7.5 *J*	8 *J*	37 *J*	44 *J*	10 *J*	5.4 *J*	49 *J*	6.2 *UJ*
22	9/28/2004	148	25 *U*	35 *U*	37 *J*	90 *J*	110 *J*	55 *U*	43 *J*	85 *J*	43 *U*
TERRREF1	9/28/2004	237	5.4 *J*	13	16	69	82	14	7.1	89	5.5 *J*
TERRREF2	10/4/2004	22.3	1.7 *U*	3.7 *J*	3.8 *J*	17	19	3.6 *U*	9.1	24	2.8 *U*
TERRREF3	10/4/2004	327	2.8 *J*	12	12	53	69	13	9.6 *J*	69	4.3 *J*
Screening Value											
PEC		459	NA	NA	845	1,050	1,450	NA	NA	1,290	536
ERM		410	500	640	1,100	1,600	1,600	260	670	2,800	540
SEL		820	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 5-2. (cont.)

Survey Station	Date	Naphthalene (µg/kg dry)	Phenanthrene (µg/kg dry)	Fluoranthene (µg/kg dry)	Pyrene (µg/kg dry)	Total PAHs (µg/kg dry)	PCBs (µg/kg dry)	Dieldrin (µg/kg dry)	Endrin (µg/kg dry)	Heptachlor-epoxide (µg/kg dry)	Aldrin (µg/kg TOC)
11A	9/29/2004	6.2	19	32	36	300 *J*	2,200 *J*	6.2 *U*	3.0 *U*	7.3 *U*	1,588 *J*
12	10/4/2004	43	35	73	80	620 *J*	2,600	13 *U*	2.1 *U*	41 *J*	12 *U*
13	10/4/2004	10 *J*	36	93	71	570 *J*	570 *J*	3.7 *U*	0.50 *U*	1.2 *J*	13 *J*
13A	9/28/2004	7.4 *U*	31 *J*	84	71	810 *J*	36	0.57 *U*	0.28 *U*	0.16 *U*	21 *U*
14	10/4/2004	15 *J*	30 *J*	66 *J*	70 *J*	320 *J*	870 *J*	19 *J*	2.3 *U*	6.6 *J*	29 *J*
16	9/29/2004	45	61	170	160	1,400 *J*	1,200	39 *U*	13 *J*	27 *J*	140 *U*
17	10/4/2004	20 *J*	35	88	73	600 *J*	7,200	46 *U*	2.9 *U*	30 *U*	11 *U*
18A	9/28/2004	31 *U*	31 *U*	53 *U*	33 *J*	330 *J*	100	3.0 *J*	1.8 *J*	1.1 *U*	13 *U*
19	9/29/2004	4.8 *J*	30 *J*	70 *J*	66 *J*	350 *J*	1,400 *J*	3.4 *U*	1.9 *U*	3.0 *U*	64 *J*
22	9/28/2004	40 *J*	94 *J*	220	200	1,400 *J*	20,000 *J*	96 *U*	6.3 *U*	13 *U*	520 *U*
TERRREF1	9/28/2004	11	54	150	130	910 *J*	280	2.3 *U*	0.36 *U*	0.87 *U*	4 *U*
TERRREF2	10/4/2004	9.0	18	42	32	250 *J*	98	0.85 *U*	0.39 *U*	0.54 *U*	8 *U*
TERRREF3	10/4/2004	16	36	100	86	710 *J*	770 *J*	16 *J*	0.48 *U*	2.8 *U*	13 *U*
Screening Value											
PEC		561	1,170	2,230	1,520	22,800	676	61.8	207	16	NA
ERM		2,100	1,500	5,100	2,600	44,792	180	NA	NA	NA	NA
SEL		NA	NA	NA	NA	NA	NA	91,000	130,000	5,000	8,000

Table 5-2. (cont.)

Survey Station	Date	alpha-Hexachloro-cyclohexane (µg/kg TOC)	beta-Hexachloro-cyclohexane (µg/kg TOC)	gamma-Hexachloro-cyclohexane (µg/kg dry)	Hexachloro-benzene (µg/kg TOC)	4,4'-DDD (µg/kg TOC)	4,4'-DDE (µg/kg dry)	4,4'-DDT (µg/kg dry)
11A	9/29/2004	65 *U*	765 *J*	3.9 *J*	165 *J*	165 *J*	6.3 *U*	$\boxed{64}$ *J*
12	10/4/2004	16 *J*	10 *U*	0.41 *U*	98 *U*	70 *J*	5.6 *U*	41 *J*
13	10/4/2004	11 *J*	27 *U*	1.2 *J*	53 *U*	16 *U*	9.1 *J*	$\boxed{67}$ *J*
13A	9/28/2004	7 *U*	629 *J*	0.12 *U*	857 *U*	36 *J*	0.80 *J*	2 *J*
14	10/4/2004	6 *J*	46 *U*	0.45 *U*	69 *UJ*	93 *J*	14 *J*	25 *J*
16	9/29/2004	48 *U*	124 *U*	1.4 *U*	120 *U*	52 *U*	7.0 *U*	25 *J*
17	10/4/2004	8 *U*	5 *U*	1.2 *J*	45 *U*	43 *J*	8.9 *U*	$\boxed{190}$ *J*
18A	9/28/2004	4 *U*	108 *J*	0.78 *J*	2,083 *U*	71 *U*	0.60 *U*	7 *J*
19	9/29/2004	3 *J*	26 *U*	0.36 *U*	69 *UJ*	17 *U*	2.5 *U*	38 *J*
22	9/28/2004	44 *U*	252 *U*	$\boxed{14}$ *J*	2,120 *U*	252 *U*	0.95 *U*	$\boxed{440}$ *J*
TERRREF1	9/28/2004	3 *J*	45 *U*	0.15 *U*	35 *U*	31 *J*	5.7 *J*	24 *J*
TERRREF2	10/4/2004	7 *J*	78 *J*	0.16 *U*	69 *U*	29 *J*	2.7 *J*	12 *J*
TERRREF3	10/4/2004	13 *U*	74 *U*	0.20 *U*	54 *U*	54 *J*	9.4 *J*	30 *J*
Screening Value								
PEC		NA	NA	$\boxed{4.99}$	NA	NA	NA	$\boxed{62.9}$
ERM		NA	NA	NA	NA	NA	$\boxed{27}$	NA
SEL		$\boxed{10,000}$	$\boxed{21,000}$	1,000	$\boxed{24,000}$	$\boxed{6,000}$	19,000	NA

Note: Boxed data values exceeded the screening value.
Boxed screening values were used for screening each contaminant.

ERM - effects range median
J - estimated
NA - not available
PAH - polycyclic aromatic hydrocarbon
PEC - probable effects concentration
PCB - polychlorinated biphenyl
SEL - severe effects level
TOC - total organic carbon basis
U - undetected at detection limit shown

Table 5-3. Summary of site-specific AETs[a]

Chemical	Survival Endpoint: 10-day Blackworm Test	Survival Endpoint: 14-day Earthworm Test	Biomass Reduction Endpoint: 28-day Blackworm Test	Biomass Reduction Endpoint: 14-day Earthworm Test	Biomass Reduction Endpoint: 28-day Earthworm Test
Metals (mg/kg dry)					
Arsenic	17,800 G	17,800 G	31.6	17,800 G	1,050
Cadmium	3.24	4.32 G	3.24	3.24	4.32 G
Chromium	311 G	311 G	311 G	311 G	311 G
Copper	1,240 G	1,240 G	382	1,240 G	487
Iron	102,000 G	102,000 G	55,700	102,000 G	55,700
Lead	277	337 G	236	337 G	319
Magnesium	6,080 G	6,080 G	1,260	6,080 G	4,770
Manganese	1,440 G	1,440 G	141	1,440 G	289
Mercury	68.0 G	68.0 G	3.6	68.0 G	15.5
Nickel	76.7	76.7	50.3	76.7	50.3
Potassium	2,640 G	2,640 G	909	2,640 G	2,280
Silver	48.2	133 G	48.2	133 G	48.2
Zinc	477	477	76.5	477	184
Organic Compounds (μg/kg dry)					
Total PCBs	7,200	20,000 G	2,200	7,200	20,000 G
γ-Chlordane	160	790 G	33	160	790 G
γ-Hexachlorocyclohexane	3.9	14	3.9	3.9	14
Heptachlor expoxide	41	41	3.7 *U*	41	27
4,4'-DDT	190	440 G	64	190	440 G

Note: AET - apparent effects threshold
G - value is highest concentration measured in conjunction with the toxicity tests
PCB - polylchlorinated biphenyl
U - undetected at detection limit given

[a] Corresponding data matrices used to derive the site-specific AETs are provided in Table 5-4.

Table 5-4. Data tables used to calculate site-specific AETs

Chemical/ Station	Concentration[a]	Blackworm Test 10-Day Survival	Blackworm Test 28-Day Biomass Reduction	Earthworm Test 14-Day Survival	Earthworm Test 14-Day Biomass Reduction	Earthworm Test 28-Day Biomass Reduction
Arsenic						
17	17,800	-- [b]	*	-- [b]	-- [b]	*
12	1,470	--	*	--	--	*
16	1,050	--	*	--	--	-- [b]
13	67.5	*	*	--	--	--
14	43.2	--	*	--	--	*
22	34.3	*	NE	--	*	--
11A	31.6	--	-- [b]	--	--	--
19	16.6	*	NE	--	--	*
18A	12.0	--	--	--	--	--
13A	9.34	--	--	--	--	--
Cadmium						
22	4.32	*	NE	-- [b]	*	-- [b]
11A	3.24	-- [b]	-- [b]	--	-- [b]	--
12	2.96	--	*	--	--	*
17	2.93	--	*	--	--	*
14	0.99	--	*	--	--	*
19	0.86	*	NE	--	--	*
16	0.46	--	*	--	--	--
13A	0.14	--	--	--	--	--
13	0.13	*	*	--	--	--
18A	0.09	--	--	--	--	--
Chromium						
11A	311	-- [b]	-- [b]	-- [b]	-- [b]	-- [b]
19	310	*	NE	--	--	*
22	280	*	NE	--	*	--
14	245	--	*	--	--	*
17	108	--	*	--	--	*
12	105	--	*	--	--	*
18A	78.4	--	--	--	--	--
16	77.1	--	*	--	--	--
13	47.1	*	*	--	--	--
13A	13.9	--	--	--	--	--
Copper						
14	1,240	-- [b]	*	-- [b]	-- [b]	*
19	1,140	*	NE	--	--	*
17	566	--	*	--	--	*
22	487	*	NE	--	*	-- [b]
13	476	*	*	--	--	--
11A	382	--	-- [b]	--	--	--
12	287	--	*	--	--	*
16	113	--	*	--	--	--
18A	59.7	--	--	--	--	--
13A	15.8	--	--	--	--	--

Table 5-4. (cont.)

Chemical/ Station	Concentration[a]	Blackworm Test: 10-Day Survival	Blackworm Test: 28-Day Biomass Reduction	Earthworm Test: 14-Day Survival	Earthworm Test: 14-Day Biomass Reduction	Earthworm Test: 28-Day Biomass Reduction
Iron						
17	102,000	-- [b]	*	-- [b]	-- [b]	*
18A	55,700	--	-- [b]	--	--	-- [b]
14	50,700	--	*	--	--	*
22	48,000	*	--	--	*	--
13	37,000	*	*	--	--	--
12	35,700	--	*	--	--	*
11A	31,800	--	--	--	--	--
19	29,400	*	--	--	--	*
16	23,900	--	*	--	--	--
13A	10,000	--	--	--	--	--
Lead						
19	337	*	NE	-- [b]	-- [b]	*
22	319	*	NE	--	*	-- [b]
17	277	-- [b]	*	--	--	*
14	239	--	*	--	--	*
11A	236	--	-- [b]	--	--	--
12	191	--	*	--	--	*
13	180	*	*	--	--	--
16	177	--	*	--	--	--
18A	143	--	--	--	--	--
13A	37.2	--	--	--	--	--
Magnesium						
12	6,080	-- [b]	*	-- [b]	-- [b]	*
14	5,200	--	*	--	--	*
16	4,770	--	*	--	--	-- [b]
13	3,210	*	*	--	--	--
19	1,650	*	NE	--	--	*
22	1,450	*	NE	--	*	--
11A	1,260	--	-- [b]	--	--	--
17	1,170	--	*	--	--	*
18A	704	--	--	--	--	--
13A	283	--	--	--	--	--
Manganese						
14	1,440	-- [b]	*	-- [b]	-- [b]	*
17	769	--	*	--	--	*
22	289	*	NE	--	*	-- [b]
12	237	--	*	--	--	*
16	230	--	*	--	--	--
13	225	*	*	--	--	--
19	155	*	NE	--	--	*
11A	141	--	-- [b]	--	--	--
18A	57.4	--	--	--	--	--
13A	41.6	--	--	--	--	--

Table 5-4. (cont.)

Chemical/ Station	Concentration[a]	Blackworm Test 10-Day Survival	Blackworm Test 28-Day Biomass Reduction	Earthworm Test 14-Day Survival	Earthworm Test 14-Day Biomass Reduction	Earthworm Test 28-Day Biomass Reduction
Mercury						
17	68.0	-- [b]	*	-- [b]	-- [b]	*
12	20.5	--	*	--	--	*
16	15.5	--	*	--	--	-- [b]
22	10.5	*	NE	--	*	--
19	8.86	*	NE	--	--	*
11A	3.60	--	-- [b]	--	--	--
14	2.82	--	*	--	--	*
13	0.88	*	*	--	--	--
18A	0.42	--	--	--	--	--
13A	0.07	--	--	--	--	--
Nickel						
17	76.7	-- [b]	*	-- [b]	-- [b]	*
14	62.8	--	*	--	--	*
11A	50.3	--	-- [b]	--	--	-- [b]
22	43.9	*	NE	--	*	--
12	35.0	--	*	--	--	*
19	14.9 *U*	*	NE	--	--	*
13	11.0 *U*	*	*	--	--	--
16	9.0 *U*	--	*	--	--	--
18A	2.6 *U*	--	--	--	--	--
13A	18.0 *U*	--	--	--	--	--
Potassium						
12	2,640	-- [b]	*	-- [b]	-- [b]	*
13	2,280	*	*	--	--	-- [b]
14	1,790	--	*	--	--	*
16	1,740	--	*	--	--	--
19	1,550	*	NE	--	--	*
11A	909	--	-- [b]	--	--	--
22	715	*	NE	--	*	--
17	508	--	*	--	--	*
18A	496	--	--	--	--	--
13A	130 *U*	--	--	--	--	--
Silver						
19	133	*	NE	-- [b]	-- [b]	*
11A	48.2	-- [b]	-- [b]	--	--	-- [b]
14	23.6	--	*	--	--	*
17	12.4	--	*	--	--	*
22	6.46	*	NE	--	*	--
12	6.20	--	*	--	--	*
18A	4.82	--	--	--	--	--
16	3.99	--	--	--	--	--
13	3.89	*	*	--	--	--
13A	0.50	--	--	--	--	--

Table 5-4. (cont.)

Chemical/ Station	Concentration[a]	Blackworm Test 10-Day Survival	Blackworm Test 28-Day Biomass Reduction	Earthworm Test 14-Day Survival	Earthworm Test 14-Day Biomass Reduction	Earthworm Test 28-Day Biomass Reduction
Zinc						
17	477	-- [b]	*	-- [b]	-- [b]	*
12	438	--	*	--	--	*
14	344	--	*	--	--	*
16	184	--	*	--	--	-- [b]
22	182	*	NE	--	*	--
198	151	*	NE	--	--	*
13	94.9	*	*	--	--	--
11A	76.5	--	-- [b]	--	--	--
18A	51.4	--	--	--	--	--
13A	42.7	--	--	--	--	--
Total PCBs						
22	20,000	*	NE	-- [b]	*	-- [b]
17	7,200	-- [b]	*	--	-- [b]	*
12	2,600	--	*	--	--	*
11A	2,200	--	-- [b]	--	--	--
19	1,400	*	NE	--	--	*
16	1,200	--	*	--	--	--
14	870	--	*	--	--	*
13	570	*	*	--	--	--
18A	100	--	--	--	--	--
13A	36	--	--	--	--	--
γ-Chlordane						
22	790	*	NE	-- [b]	*	-- [b]
17	160	-- [b]	*	--	-- [b]	*
16	39	--	*	--	--	--
12	36	--	*	--	--	*
11A	33	--	-- [b]	--	--	--
19	15	*	NE	--	--	*
14	13	--	*	--	--	*
13	2.1 *U*	*	*	--	--	--
18A	0.35 *U*	--	--	--	--	--
13A	0.30 *U*	--	--	--	--	--
γ-Hexachlorocyclohexane						
22	14	*	NE	-- [b]	*	-- [b]
11A	3.9	-- [b]	-- [b]	--	-- [b]	--
13	1.2	*	*	--	--	--
17	1.1	--	*	--	--	*
18A	0.8	--	--	--	--	--
16	0.7 *U*	--	*	--	--	--
14	0.2 *U*	--	*	--	--	*
12	0.2 *U*	--	*	--	--	*
19	0.2 *U*	*	NE	--	--	*
13A	0.1 *U*	--	--	--	--	--

Table 5-4. (cont.)

Chemical/ Station	Concentration[a]	Blackworm Test 10-Day Survival	Blackworm Test 28-Day Biomass Reduction	Earthworm Test 14-Day Survival	Earthworm Test 14-Day Biomass Reduction	Earthworm Test 28-Day Biomass Reduction
Heptachlor epoxide						
12	41	-- [b]	*	-- [b]	-- [b]	*
16	27	--	*	--	--	-- [b]
14	6.6	--	*	--	--	*
13	1.2	*	*	--	--	--
17	15 *U*	--	*	--	--	*
22	6.5 *U*	*	NE	--	*	--
11A	3.7 *U*	--	-- [b]	--	--	--
19	1.5 *U*	*	NE	--	--	*
18A	0.6 *U*	--	--	--	--	--
13A	0.1 *U*	--	--	--	--	--
4,4′-DDT						
22	440	*	*	-- [b]	*	-- [b]
17	190	-- [b]	NE	--	-- [b]	*
13	67	*	*	--	--	--
11A	64	--	-- [b]	--	--	--
12	41	--	*	--	--	*
19	38	*	NE	--	--	*
14	25	--	*	--	--	*
16	25	--	*	--	--	--
18A	6.7	--	--	--	--	--
13A	2.2	--	--	--	--	--

Note: -- - significant effect not found
* - significant effect found
AET - apparent effects threshold
NE - endpoint not evaluated (see text for explanation)
PCB - polychlorinated biphenyl
U - undetected at detection limit shown

[a] Metals concentrations are in mg/kg dry weight; concentrations of organic compounds are in μg/kg dry weight.

[b] Concentration that determines the AET for each endpoint.

Table 5-5. Summary of site-specific LAETs

Chemical	LAET
Metals (mg/kg dry)	
Arsenic	31.6
Cadmium	3.24
Chromium	311 G
Copper	382
Iron	55,700
Lead	236
Magnesium	1,260
Manganese	141
Mercury	3.6
Nickel	50.3
Potassium	909
Silver	48.2
Zinc	76.5
Organic Compounds (µg/kg dry)	
Total PCBs	2,200
γ-Chlordane	33
γ-Hexachlorocyclohexane	3.9
Heptachlor epoxide	27
4,4'-DDT	64

Note: G - value is highest concentration measured in conjunction with the toxicity tests
LAET - lowest apparent effects threshold
PCB - polychlorinated biphenyl

Table 5-6. Concentrations of target chemicals with individual, mean, and summed AETQs for OU-3 and reference stations[a,b]

	Arsenic		Cadmium		Chromium		Copper		Iron		Lead		Magnesium	
Study Site	Conc.	AETQ	Conc.	AETQ	Conc.	AETQ	Conc.	AETQ	Conc.	AETQ	Conc.	AETQ	Conc.	AETQ
11A	31.6	1.00	3.24	1.00	311	1.00	382	1.00	31,800	0.57	236	1.00	1,260	1.00
12	1,470	46.52	2.96	0.91	105	0.34	287	0.75	35,700	0.64	191	0.81	6,080	4.83
13	67.5	2.14	0.13	0.04	47.1	0.15	476	1.25	37,000	0.66	180	0.76	3,210	2.55
13A	9.34	0.30	0.14	0.04	13.9	0.04	15.8	0.04	10,000	0.18	37.2	0.16	283	0.22
14	43.2	1.37	0.99	0.31	245	0.79	1,240	3.25	50,700	0.91	239	1.01	5,200	4.13
16	1,050	33.23	0.46	0.14	77.1	0.25	113	0.30	23,900	0.43	177	0.75	4,770	3.79
17	17,800	563.29	2.93	0.90	108	0.35	566	1.48	102,000	1.83	277	1.17	1,170	0.93
18A	12.0	0.38	0.091	0.03	78.4	0.25	59.7	0.16	55,700	1.00	143	0.61	704	0.56
19	16.6	0.53	0.86	0.27	310	1.00	1,140	2.98	29,400	0.53	337	1.43	1,650	1.31
22	34.3	1.09	4.32	1.33	280	0.90	487	1.27	48,000	0.86	319	1.35	1,450	1.15
REF1	38.9	1.23	1.4	0.43	59.5	0.19	225	0.59	22,400	0.40	167	0.71	2,360	1.87
REF2	6.68	0.21	0.068	0.02	15.6	0.05	34.5	0.09	7,530	0.14	82.2	0.35	349	0.28
REF3	49.9	1.58	2.71	0.84	90.3	0.29	314	0.82	32,300	0.58	180	0.76	3,630	2.88
Growth LAET:		31.6		3.24		311		382		55,700		236		1,260

Table 5-6. (cont.)

	Manganese		Mercury		Nickel		Potassium		Silver		Zinc		4,4'-DDT	
Study Site	Conc.	AETQ	Conc.	AETQ	Conc.	AETQ	Conc.	AETQ	Conc.	AETQ	Conc.	AETQ	Conc.	AETQ
11A	141	1.00	3.60	1.00	50.3	1.00	909	1.00	48.2	1.00	76.5	1.00	64	1.00
12	237	1.68	20.5	5.69	35.0	0.70	2,640	2.90	6.20	0.13	438	5.73	41	0.64
13	225	1.60	0.88	0.24	11.0 *U*	0.22	2,280	2.51	3.89	0.08	94.9	1.24	67	1.05
13A	41.6	0.30	0.073	0.02	1.82 *U*	0.04	130 *U*	0.14	0.50	0.01	42.7	0.56	2.2	0.03
14	1,440	10.21	2.82	0.78	62.8	1.25	1,790	1.97	23.6	0.49	344	4.50	25	0.39
16	230	1.63	15.5	4.31	9.00 *U*	0.18	1,740	1.91	3.99	0.08	184	2.41	25	0.39
17	769	5.45	68.0	18.89	76.7	1.52	508	0.56	12.4	0.26	477	6.24	190	2.97
18A	57.4	0.41	0.42	0.12	2.57 *U*	0.05	496	0.55	4.82	0.10	51.4	0.67	6.7	0.10
19	155	1.10	8.86	2.46	14.9 *U*	0.30	1,550	1.71	133	2.76	151	1.97	38	0.59
22	289	2.05	10.5	2.92	43.9	0.87	715	0.79	6.46	0.13	182	2.38	440	6.88
REF1	677	4.80	0.76	0.21	12.7 *U*	0.25	978	1.08	3.84	0.08	264	3.45	24	0.38
REF2	29.4	0.21	0.18	0.05	1.86 *U*	0.04	378	0.42	1.3	0.03	27.0	0.35	12	0.19
REF3	374	2.65	1.4	0.39	33.8	0.67	1,740	1.91	4.63	0.10	374	4.89	30	0.47
Growth LAET:		141		3.6		50.3		909		48.2		76.5		64

Table 5-6. (cont.)

Study Site	γ-Chlordane Conc.	γ-Chlordane AETQ	Heptachlor epoxide Conc.	Heptachlor epoxide AETQ	γ-Hexachloro-cyclohexane Conc.	γ-Hexachloro-cyclohexane AETQ	Total PCBs Conc.	Total PCBs AETQ	Mean AETQs	Summed AETQs
11A	33	1.00	3.7 *U*	0.14	3.9	1.00	2,200	1.00	0.93	16.71
12	36	1.09	41	1.52	0.21 *U*	0.05	2,600	1.18	4.23	76.11
13	2.1 *U*	0.06	1.2	0.04	1.2	0.31	570	0.26	0.84	15.16
13A	0.30 *U*	0.01	0.080 *U*	0.00	0.060 *U*	0.02	36	0.02	0.12	2.13
14	13	0.39	6.6	0.24	0.23 *U*	0.06	870	0.40	1.80	32.44
16	39	1.18	27	1.00	0.70 *U*	0.18	1,200	0.55	2.93	52.69
17	160	4.85	15 *U*	0.56	1.1	0.28	7,200	3.27	34.16	614.80
18A	0.35 *U*	0.01	0.55 *U*	0.02	0.78	0.20	100	0.05	0.29	5.25
19	15	0.45	1.5 *U*	0.06	0.18 *U*	0.05	1,400	0.64	1.12	20.12
22	790	23.94	6.5 *U*	0.24	14	3.59	20,000	9.09	3.38	60.83
REF1	2.7 *U*	0.08	0.44 *U*	0.02	0.075 *U*	0.02	280	0.13	0.88	15.92
REF2	1.1 *U*	0.03	0.27 *U*	0.01	0.080 *U*	0.02	98	0.04	0.14	2.52
REF3	14	0.42	1.4 *U*	0.05	0.10 *U*	0.03	770	0.35	1.09	19.68
Growth LAET:		33		*27*		*3.9*		2,200		

Note: Undetected results are reported at half the detection limit.

AETQ - apparent effect threshold quotient (based on the LAET for each target chemical)
LAET - lowest apparent effect threshold
PCB - polychlorinated biphenyl
U - undetected at concentration listed.

[a] The LAET for each target chemical is presented in Table 5-5.

[b] Metals concentrations are in mg/kg dry weight; concentrations of organic compounds are in μg/kg dry weight.

Table 5-7. Concentrations of target chemicals with individual, mean, and summed AETQs for historical OU-3 marsh stations [a,b]

	Arsenic		Cadmium		Chromium		Copper		Iron		Lead		Magnesium		Manganese		Mercury		Nickel	
Study Site	Conc.	AETQ	Conc.	AETQ	Conc.	AETQ	Conc.	AETQ	Conc.	AETQ	Conc.	AETQ	Conc.	AETQ	Conc.	AETQ	Conc.	AETQ	Conc.	AETQ
SD09			4.5	1.39	74.1	0.24	379	0.99	22,900	0.41	185	0.78	702	0.56	89.9	0.64	11.9	3.31	35.4	0.70
SD10			3.2	0.99	76.0	0.24	284	0.74	38,400	0.69	160	0.68	959	0.76	167	1.18	7.5	2.08	33.4	0.66
SD11			2.8	0.86	303	0.97	461	1.21	30,500	0.55	261	1.11	1,090	0.87	87.1	0.62	19.4	5.39	19.9	0.40
SD12			0.66	0.20	96.6	0.31	249	0.65	31,900	0.57	240	1.02	2,520	2.00	113	0.80	12.4	3.44	15.1	0.30
SD32			2.7	0.83	205	0.66	677	1.77	133,000	2.39	138	0.58	750	0.60	1,510	10.71	8.8	2.44	442	8.79
SD33			2.1	0.65	201	0.65	502	1.31	326,000	5.85	90.7	0.38	567	0.45	2,140	15.18	8.7	2.42	551	10.95
SD34			6.5	2.01	6,260	20.13	5,300	13.87	23,800	0.43	89.4	0.38	679	0.54	2,080	14.75	114	31.67	463	9.20
SD35			0.075 *U*	0.02	92.1	0.30	246	0.64	64,000	1.15	247	1.05	5,560	4.41	263	1.87	22.5	6.25	29.7	0.59
SD36			0.045 *U*	0.01	778	2.50	357	0.93	48,500	0.87	197	0.83	713	0.57	46.2	0.33	4.4	1.22	10.1	0.20
SD37			0.035 *U*	0.01	19.9	0.06	19.6	0.05	29,500	0.53	19.7	0.08	447	0.35	35.6	0.25	0.36	0.10	4.8	0.10
SDM01	3,540	112.03	1.0	0.31	223	0.72	311	0.81	36,000	0.65	289	1.22	3,460	2.75	158	1.12	385	106.94	26.2	0.52
SDM02	4,830	152.85	0.47	0.15	227	0.73	230	0.60	43,800	0.79	328	1.39	4,190	3.33	143	1.01	133	36.94	26.2	0.52
SDM03	8,220	260.13	5.6	1.73	223	0.72	371	0.97	115,000	2.06	338	1.43	1,090	0.87	627	4.45	184	51.11	49.9	0.99
SDM04	3,430	108.54	0.51	0.16	182	0.59	334	0.87	79,400	1.43	276	1.17	4,800	3.81	480	3.40	39.1	10.86	93.3	1.85
SDM05	654	20.70	0.15	0.05	261	0.84	646	1.69	263,000	4.72	99.5	0.42	916	0.73	2,120	15.04	9.2	2.56	572	11.37
SDM06	6,610	209.18	0.080 *U*	0.02	4,950	15.92	4,040	10.58	82,000	1.47	323	1.37	2,430	1.93	404	2.87	21.1	5.86	44.9	0.89
SDM07	1,980	62.66	0.045 *U*	0.01	55.9	0.18	115	0.30	27,300	0.49	147	0.62	3,040	2.41	156	1.11	4.2	1.17	16.5	0.33
SDM08	393	12.44	3.3	1.02	779	2.50	2,590	6.78	64,100	1.15	220	0.93	6,850	5.44	369	2.62	3.3	0.92	89.0	1.77
SDM09	231	7.31	0.16 *U*	0.05	1,220	3.92	1,600	4.19	55,800	1.00	306	1.30	4,820	3.83	273	1.94	4.4	1.22	46.4	0.92
SDM10	32.3	1.02	0.070 *U*	0.02	352	1.13	1,040	2.72	37,400	0.67	310	1.31	1,790	1.42	93.6	0.66	6.0	1.67	28.3	0.56
SDM11	24.7	0.78	0.035 *U*	0.01	502	1.61	221	0.58	27,300	0.49	149	0.63	440	0.35	30.4	0.22	2.4	0.67	5.1	0.10
SDM12	925	29.27	0.055 *U*	0.02	303	0.97	705	1.85	306,000	5.49	103	0.44	893	0.71	2,520	17.87	6.0	1.67	671	13.34
Growth LAET:		31.6		3.24		311		382		55,700		236		1,260		141		3.6		50.3

Table 5-7. (cont.)

Site	Potassium		Silver		Zinc		4,4'-DDT		γ-Chlordane		Heptachlor epoxide		γ-Hexachloro-cyclohexane		Total PCBs		Mean	Summed
	Conc.	AETQ	Conc.	AETQ	Conc.	AETQ	Conc.	AETQ	Conc.	AETQ	Conc.	AETQ	Conc.	AETQ	Conc.	AETQ	AETQs	AETQs
SD09	733	0.81	7.4	0.15	492	6.43	4.1 *U*	0.06					12	3.08	8,200	3.73	1.55	23.28
SD10	701	0.77	6.2	0.13	441	5.76	6.5 *U*	0.10			3.3 *U*	0.12	3.3 *U*	0.85	5,800	2.64	1.15	18.41
SD11	1,090	1.20	4.5	0.09	258	3.37	550 *U*	8.59	300 *U*	9.09	300 *U*	11.11	300 *U*	76.92	12,000 *U*	5.45	7.52	127.80
SD12	1,280	1.41	4.6	0.10	132	1.73	5.5 *U*	0.09			2.8 *U*	0.10	2.8 *U*	0.72	20,000	9.09	1.41	22.53
SD32	362	0.40	60.0	1.24	304	3.97	9.8	0.15	1.8 *U*	0.05	1.8 *U*	0.07	1.8 *U*	0.46	70 *U*	0.03	2.07	35.16
SD33	250	0.28	10.3	0.21	215	2.81	4.3 *U*	0.07	2.2 *U*	0.07	2.2 *U*	0.08	2.2 *U*	0.56	660	0.30	2.48	42.22
SD34	309	0.34			170	2.22	2.9 *U*	0.05	3.2	0.10	1.5 *U*	0.06	1.5 *U*	0.38	75 *U*	0.03	6.01	96.16
SD35	2,200	2.42			185	2.42	3.8 *U*	0.06	2.0 *U*	0.06	2.0 *U*	0.07	2.0 *U*	0.51	890	0.40	1.39	22.23
SD36	751	0.83			33.7	0.44	5.8	0.09			1.3 *U*	0.05	1.3 *U*	0.33	170	0.08	0.62	9.29
SD37	692	0.76	2.1	0.04	16.9	0.22	28	0.44	1.0 *U*	0.03	1.0 *U*	0.04	1.0 *U*	0.26	40 *U*	0.02	0.20	3.35
SDM01	1,890	2.08	4.8	0.10	280	3.66					19 *U*	0.70	19 *U*	4.87	32,000	14.55	15.81	253.03
SDM02	2,180	2.40	5.7	0.12	159	2.08					2.1 *U*	0.08	2.1 *U*	0.54	13,000	5.91	13.09	209.43
SDM03	816	0.90	9.2	0.19	650	8.50					580	21.48	3.8 *U*	0.97	27,000	12.27	23.05	368.77
SDM04	2,250	2.48	10.3	0.21	303	3.96	3.6 *U*	0.06			8.0 *U*	0.30	1.8 *U*	0.46	2,300	1.05	8.31	141.20
SDM05	522	0.57	40.3	0.84	244	3.19	3.0 *U*	0.05	1.6 *U*	0.05	4.5	0.17	1.6 *U*	0.41	290	0.13	3.53	63.51
SDM06	1,270	1.40	8.6	0.18	77.8	1.02	3.4 *U*	0.05			9.8	0.36	1.8 *U*	0.46	780	0.35	14.94	253.91
SDM07	1,400	1.54	3.9	0.08	56.3	0.74	24	0.38	1.3 *U*	0.04	13	0.48	1.3 *U*	0.33	610	0.28	4.06	73.14
SDM08	3,340	3.67	10.7	0.22	596	7.79	8.0 *U*	0.13	4.1 *U*	0.12	4.1 *U*	0.15	4.1 *U*	1.05	500	0.23	2.72	48.93
SDM09	2,410	2.65	8.3	0.17	213	2.78	10 *U*	0.16	5.5 *U*	0.17	5.5 *U*	0.20	5.5 *U*	1.41	420	0.19	1.86	33.41
SDM10	1,470	1.62	63.2	1.31	92.6	1.21	3.7 *U*	0.06	1.9 *U*	0.06	4.9	0.18	1.9 *U*	0.49	360	0.16	0.90	16.28
SDM11	430	0.47	29.9	0.62	24.9	0.33	2.1 *U*	0.03	1.1 *U*	0.03	28	1.04	0.19	0.05	940	0.43	0.47	8.44
SDM12	391	0.43	39.0	0.81	228	2.98	6.1	0.10	1.3 *U*	0.04	1.4 *U*	0.05	1.3 *U*	0.33	180	0.08	4.25	76.45
Growth LAET:		909		48.2		*76.5*		64		33		*27*		*3.9*		2,200		

Note: Undetected results are reported at half the detection limit.

AETQ - apparent effect threshold quotient (based on the LAET for each target chemical)
LAET - lowest apparent effect threshold
OU-3 - Operable Unit 3
PCB - polychlorinated biphenyl
U - undetected at concentration listed.

[a] The LAET for each target chemical is presented in Table 5-5.

[b] Metals concentrations are in mg/kg dry weight; concentrations of organic compounds are in μg/kg dry weight.

Table 6-1. Comparison of CoPC concentrations in Raritan River fish samples from 2004 with literature-based effects levels

			Site			Reference		
Analyte	Tissue Residue Level[a]	Tissue Residue Level Source[b]	Detection Frequency	Mean Detected Value	Maximum Detected Value	Detection Frequency	Mean Detected Value	Maximum Detected Value
Pesticides/PCBs (μg/kg)								
4,4'-DDD	1,000 [c]	Reference 5, Table 16	30/30	25	36	5/5	25	32
4,4'-DDE	290 [d]	Reference 28, Table 16	30/30	29	35	5/5	28	33
4,4'-DDT	464 [d]	Reference 99, Table 16	15/30	10	12	5/5	9	10
Dieldrin	1,210 [d]	Reference 411, Table 16	27/30	3	4.6	5/5	2.9	3.3
Total chlordane	100	Eisler (1990)	30/30	2.9, 7 [e]	4, 11 [e]	5/5	2.8, 5 [e]	3.3, 6.1 [e]
PCBs	161,000 [d,f]	Reference 466, Table 21	30/30	590	810	5/5	590	660
TCDD-eq (ng/kg)	230 [g]	Reference 470, Table 22	6/6	0.84	1.1	3/3	1.7	1.8
Inorganic Analytes (mg/kg)								
Aluminum	< 8 [d]	Reference 360, Table 14	30/30	63	242	5/5	39.8	55.8
Antimony	9 [d]	Reference 119, Table 15	30/30	0.013	0.027	5/5	0.013	0.018
Arsenic	2.24 [d]	Reference 149, Table 11	30/30	0.9	1.4	5/5	0.62	0.7
Cadmium	0.96 [d]	Reference 248, Table 5	30/30	0.009	0.014	5/5	0.009	0.012
Copper	11.1 [d]	Reference 432, Table 7	30/30	3.81	5.36	5/5	3.49	4.44
Lead	0.4 [d]	Reference 207, Table 12	30/30	0.2	0.62	5/5	0.18	0.24
Mercury	0.04 [d]	Reference 33, Table 6	30/30	0.025	0.041	5/5	0.02	0.022
Nickel	118.1 [d]	Reference 427, Table 13	30/30	0.54	0.83	5/5	0.52	0.59
Selenium	0.66 [d]	Reference 162, Table 8	30/30	0.49	0.67	5/5	0.4	0.45
Silver	0.06 [c]	Reference 88, Table 15	30/30	0.07	0.098	5/5	0.054	0.062
Vanadium	2.22 [d]	References 208 and 209, Table 15	30/30	0.5	1.1	5/5	0.46	0.54
Zinc	44 [d]	Reference 418, Table 9	30/30	38.3	40.6	5/5	38.4	40.4

Note: CoPC - chemical of potential concern
PCB - polychlorinated biphenyl
SLERA - screening level ecological risk assessment
TEQ - toxicity equivalent

[a] Concentrations are reported on a wet weight basis.

[b] All tissue residue levels taken from Jarvinen and Ankley (1999), reference number and table refer to corresponding information in that compilation source.

[c] Maximum no-effect level reported in Table 5-4 of the SLERA; no thresholds for effects were reported for this chemical (CDM 2002b).

[d] Minimum threshold for effects reported in Table 5-4 of the SLERA (CDM 2002b).

[e] α-Chlordane, γ-chlordane.

[f] Tissue residue level for Aroclor® 1260 (CDM 2002b).

[g] Referred to as TCDD-eq in the SLERA (CDM 2002b).

Table 7-2. Ecological exposure parameters used in food-web models for the evaluation of risks to wildlife at Horseshoe Road/ARC OU-3

Receptor	Body Weight (kg)	Food Ingestion Rate (kg/day(wet wt)	Sediment Ingestion Rate (kg/day dry wt)	Diet Composition (percent)[a]	Area Use Factor (unitless)
Marsh					
Short-tailed shrew	0.015 [b]	0.0144 [c]	0.000201 [d]	75% earthworms, 25% other terrestrial invertebrates	1 [e]
Muskrat	1.35 [f]	0.459 [g]	0.00386 [h]	100% *Phragmites*	1 [e]
Red-tailed hawk	1.224 [i]	0.283 [j]	0.00246 [k]	100% small mammals	0.00346 [l]
Marsh wren	0.010 [m]	0.00911 [n]	0.000273 [d]	90% terrestrial invertebrates, 10% blackworms	1 [e]
River					
Osprey	1.725 [o]	0.362 [p]	0.00181 [q]	100% fish	0.0030947 [r]
Herring gull	1 [m]	0.210 [s]	0.00548 [t]	50% crabs, 50% fish	0.00895 [u]

[a] Simplified from dietary compositions reported in U.S. EPA (1993).

[b] Mean adult body weight from Schlesinger and Potter (1974).

[c] Calculated using the allometric equation for mammalian insectivores from Nagy et al. (1999) and an average moisture content of 86 percent for earthworms.

[d] Based on 10 percent soil in the American woodcock's diet (on a dry weight basis) from Beyer et al. (1994).

[e] Receptor's estimated home range is smaller than the site (U.S. EPA 1993).

[f] Mean female body weight (Dozier 1950, as cited in U.S. EPA 1993).

[g] Based on 0.34 g/g-day ingestion rate from Svihla and Svihla (1931, as cited in U.S. EPA 1993).

[h] Based on less than 2 percent soil in the woodchuck's diet (on a dry weight basis) from Beyer et al. (1994) and an average moisture content of 58 percent for *Phragmites* .

[i] Mean female body weight from Craighead and Craighead (1969).

[j] Calculated using the allometric equation for all birds from Nagy et al. (1999) and an average moisture content of 71 percent for small mammals.

[k] Based on 3 percent soil in the red fox diet (on a dry weight basis) from Beyer et al. (1994).

[l] Marsh area (2.41 ha) divided by average home range (697 ha) for red-tailed hawks (Craighead and Craighead 1969).

[m] Estmated from mean adult body weights reported in U.S. EPA (1993).

[n] Calculated using the allometric equation for insectivorous birds from Nagy et al. (1999) and an average moisture content of 70 percent for terrestrial invertebrates.

[o] Mean adult female body weight during late nestling period (Poole 1984).

[p] Based on 0.21 g/g-day ingestion rate for adult females (Poole 1983, as cited in U.S. EPA 1993).

[q] Based on the minimum percentage of soil in wildlife diets (2 percent on a dry weight basis) from Beyer et al. (1994) and an average moisture content of 75 percent for fish.

[r] Based on an onsite Raritan River area of 2.81 ha and a mean foraging radius of 1.7 km for male ospreys during nesting (Dunstan 1973).

[s] Based on an ingestion rate of 0.21 g/g-day (Pierotti and Annett 1991, as cited in U.S. EPA 1993).

[t] Based on 9 percent soil in the raccoon's diet (on a dry weight basis) from Beyer et al. (1994) and an average moisture content of 71 percent for whole crabs and fish.

[u] Based on an onsite Raritan River area of 2.81 ha and a minimum foraging radius of 1 km for brooding herring gulls (Morris and Black 1980).

Table 7-3. Toxicity reference values used in the evaluation of risks to wildlife at Horseshoe Road/ARC OU-3

Analyte	Avian NOAEL (mg/kg-day)	Avian LOAEL (mg/kg-day)	Citation	Mammalian NOAEL (mg/kg-day)	Mammalian LOAEL (mg/kg-day)	Citation
Semivolatile Organic Compounds						
2,4,5-Trichlorophenol	NB	--	CDM (2002b)	100	--	CDM (2002b)
2,4,6-Trichlorophenol	NB	--	CDM (2002b)	NB	--	CDM (2002b)
2,4-Dichlorophenol	NB	--	CDM (2002b)	0.3	--	CDM (2002b)
2,4-Dimethylphenol	NB	--	CDM (2002b)	50	--	CDM (2002b)
2,4-Dinitrophenol	NB	--	CDM (2002b)	NB	--	CDM (2002b)
2,4-Dinitrotoluene	NB	--	CDM (2002b)	0.2	--	CDM (2002b)
2,6-Dinitrotoluene	NB	--	CDM (2002b)	3.54	--	CDM (2002b)
2-Chloronaphthalene	NB	--	CDM (2002b)	250	--	CDM (2002b)
2-Chlorophenol	NB	--	CDM (2002b)	5	--	CDM (2002b)
2-Methyl-4,6-dinitrophenol	0.454	--	CDM (2002b)	0.42	--	CDM (2002b)
2-Methylnaphthalene	NB	--	CDM (2002b)	5	--	CDM (2002b)
2-Methylphenol	NB	--	CDM (2002b)	50	--	CDM (2002b)
2-Nitroaniline	NB	--	CDM (2002b)	71.2	--	CDM (2002b)
2-Nitrophenol	NB	--	CDM (2002b)	6.68	--	CDM (2002b)
3,3'-Dichlorobenzidine	NB	--	CDM (2002b)	NB	--	CDM (2002b)
3-Nitroaniline	NB	--	CDM (2002b)	18	--	CDM (2002b)
4-Bromophenyl-phenyl ether	NB	--	CDM (2002b)	NB	--	CDM (2002b)
4-Chloro-3-methylphenol	NB	--	CDM (2002b)	14.2	--	CDM (2002b)
4-Chloroaniline	NB	--	CDM (2002b)	1.25	--	CDM (2002b)
4-Chlorophenyl-phenyl ether	NB	--	CDM (2002b)	NB	--	CDM (2002b)
4-Methylphenol	NB	--	CDM (2002b)	NB	--	CDM (2002b)
4-Nitroaniline	NB	--	CDM (2002b)	NB	--	CDM (2002b)
4-Nitrophenol	NB	--	CDM (2002b)	NB	--	CDM (2002b)
Acenaphthene	NB	--	CDM (2002b)	175	--	CDM (2002b)
Acenaphthylene	NB	--	CDM (2002b)	NB	--	CDM (2002b)
Acetophenone	NB	--	CDM (2002b)	423	--	CDM (2002b)
Anthracene	NB	--	CDM (2002b)	1,000	--	CDM (2002b)
Atrazine	NB	--	CDM (2002b)	3.5	--	CDM (2002b)
Benz[a]anthracene	NB	--	CDM (2002b)	NB	--	CDM (2002b)
Benzaldehyde	NB	--	CDM (2002b)	143	--	CDM (2002b)
Benzo[a]pyrene	NB	--	CDM (2002b)	1	--	CDM (2002b)
Benzo[b]fluoranthene	NB	--	CDM (2002b)	NB	--	CDM (2002b)
Benzo[ghi]perylene	NB	--	CDM (2002b)	NB	--	CDM (2002b)
Benzo[k]fluoranthene	NB	--	CDM (2002b)	NB	--	CDM (2002b)
Biphenyl	NB	--	CDM (2002b)	50	--	CDM (2002b)
Bis[2-chloroethoxy]methane	NB	--	CDM (2002b)	13	--	CDM (2002b)
Bis[2-chloroethyl]ether	NB	--	CDM (2002b)	1.5	--	CDM (2002b)
Bis[2-chloroisopropyl]ether	NB	--	CDM (2002b)	35.8	--	CDM (2002b)
Bis[2-Ethylhexyl]phthalate	1.2	--	Peakall (1974)	3.5	--	CDM (2002b)
Butylbenzyl phthalate	NB	--	CDM (2002b)	159	--	CDM (2002b)

Table 7-3. (cont.)

Analyte	Avian NOAEL (mg/kg-day)	Avian LOAEL (mg/kg-day)	Citation	Mammalian NOAEL (mg/kg-day)	Mammalian LOAEL (mg/kg-day)	Citation
Caprolactam	NB	--	CDM (2002b)	50	--	CDM (2002b)
Carbazole	NB	--	CDM (2002b)	10	--	CDM (2002b)
Chrysene	NB	--	CDM (2002b)	NB	--	CDM (2002b)
Dibenz[a,h]anthracene	NB	--	CDM (2002b)	NB	--	CDM (2002b)
Dibenzofuran	NB	--	CDM (2002b)	12.5	--	CDM (2002b)
Diethyl phthalate	NB	--	CDM (2002b)	4,580	--	CDM (2002b)
Dimethyl phthalate	NB	--	CDM (2002b)	48	--	CDM (2002b)
Di-*n*-butyl phthalate	NB	--	CDM (2002b)	550	--	CDM (2002b)
Di-*n*-octyl phthalate	NB	--	CDM (2002b)	17.5	--	CDM (2002b)
Fluoranthene	NB	--	CDM (2002b)	125	--	CDM (2002b)
Fluorene	NB	--	CDM (2002b)	125	--	CDM (2002b)
Hexachlorobenzene	NB	--	CDM (2002b)	0.08	--	CDM (2002b)
Hexachlorobutadiene	NB	--	CDM (2002b)	1.74	--	CDM (2002b)
Hexachlorocyclopentadiene	NB	--	CDM (2002b)	7	--	CDM (2002b)
Hexachloroethane	NB	--	CDM (2002b)	1	--	CDM (2002b)
Indeno[1,2,3-cd]pyrene	NB	--	CDM (2002b)	NB	--	CDM (2002b)
Isophorone	NB	--	CDM (2002b)	150	--	CDM (2002b)
Naphthalene	NB	--	CDM (2002b)	71	--	CDM (2002b)
Nitrobenzene	NB	--	CDM (2002b)	12	--	CDM (2002b)
N-nitroso-di-*n*-propylamine	NB	--	CDM (2002b)	9.6	--	CDM (2002b)
N-nitrosodiphenylamine	NB	--	CDM (2002b)	NB	--	CDM (2002b)
Pentachlorophenol	NB	--	CDM (2002b)	3	--	CDM (2002b)
Phenanthrene	NB	--	CDM (2002b)	14	--	CDM (2002b)
Phenol	NB	--	CDM (2002b)	60	--	CDM (2002b)
Pyrene	NB	--	CDM (2002b)	75	--	CDM (2002b)
Total PAHs	0.14	1.4	Hough et al. (1993)	1.0	10	Mackenzie and Angevine (1981)
Pesticides/Polychlorinated Biphenyls						
4,4'-DDD	57.9	--	CDM (2002b)	2.26	--	CDM (2002b)
4,4'-DDE	82.9	--	CDM (2002b)	970	--	CDM (2002b)
4,4'-DDT	0.5	--	CDM (2002b)	0.05	--	CDM (2002b)
Aldrin	3.4	--	CDM (2002b)	0.25	--	CDM (2002b)
α-Chlordane	0.282	--	CDM (2002b)	0.045	--	CDM (2002b)
α-Endosulfan	NB	--	CDM (2002b)	0.6	--	CDM (2002b)
α-Hexachlorocyclohexane	NB	--	CDM (2002b)	1.3	--	CDM (2002b)
β-Endosulfan	NB	--	CDM (2002b)	0.6	--	CDM (2002b)
β-Hexachlorocyclohexane	NB	--	CDM (2002b)	0.4	--	CDM (2002b)
δ-Hexachlorocyclohexane	NB	--	CDM (2002b)	20	--	CDM (2002b)
Dieldrin	0.077	--	CDM (2002b)	0.15	--	CDM (2002b)
Endosulfan sulfate	NB	--	CDM (2002b)	NB	--	CDM (2002b)
Endrin	0.01	--	CDM (2002b)	0.092	--	CDM (2002b)
Endrin aldehyde	NB	--	CDM (2002b)	NB	--	CDM (2002b)

Table 7-3. (cont.)

Analyte	Avian NOAEL (mg/kg-day)	Avian LOAEL (mg/kg-day)	Citation	Mammalian NOAEL (mg/kg-day)	Mammalian LOAEL (mg/kg-day)	Citation
Endrin ketone	NB	--	CDM (2002b)	NB	--	CDM (2002b)
γ-Chlordane	0.282	--	CDM (2002b)	0.045	--	CDM (2002b)
γ-Hexachlorocyclohexane	42.5	--	CDM (2002b)	10	--	CDM (2002b)
Heptachlor	9.2	--	CDM (2002b)	0.1	--	CDM (2002b)
Heptachlor epoxide	NB	--	CDM (2002b)	8	--	CDM (2002b)
Methoxychlor	10	--	CDM (2002b)	4	--	CDM (2002b)
Polychlorinated biphenyls	0.41	1.8	McLane and Hughes (1980) (NOAEL) Dahlgren et al. (1972) (LOAEL)	0.14	0.27	Aulerich and Ringer (1977)
Toxaphene	NB	--	CDM (2002b)	1.6	--	CDM (2002b)
Dioxins/Furans						
2,3,7,8-Tetrachlorodibenzo-*p*-dioxin	0.000014	--	CDM (2002b)	0.0001	--	CDM (2002b)
1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin	0.000014	--	CDM (2002b)	NB	--	CDM (2002b)
1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin	0.000014	--	CDM (2002b)	NB	--	CDM (2002b)
1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin	0.000014	--	CDM (2002b)	NB	--	CDM (2002b)
1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin	0.000014	--	CDM (2002b)	NB	--	CDM (2002b)
1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin	0.000014	--	CDM (2002b)	NB	--	CDM (2002b)
Octachlorodibenzo-*p*-dioxin	0.000014	--	CDM (2002b)	1	--	CDM (2002b)
2,3,7,8-Tetrachlorodibenzofuran	0.000001	--	CDM (2002b)	0.000001	--	CDM (2002b)
1,2,3,7,8-Pentachlorodibenzofuran	0.000014	--	CDM (2002b)	0.00016	--	CDM (2002b)
2,3,4,7,8-Pentachlorodibenzofuran	0.000014	--	CDM (2002b)	0.000016	--	CDM (2002b)
1,2,3,4,7,8-Hexachlorodibenzofuran	0.000014	--	CDM (2002b)	NB	--	CDM (2002b)
1,2,3,6,7,8-Hexachlorodibenzofuran	0.000014	--	CDM (2002b)	0.00016	--	CDM (2002b)
2,3,4,6,7,8-Hexachlorodibenzofuran	0.000014	--	CDM (2002b)	NB	--	CDM (2002b)
1,2,3,7,8,9-Hexachlorodibenzofuran	0.000014	--	CDM (2002b)	NB	--	CDM (2002b)
1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.000014	--	CDM (2002b)	NB	--	CDM (2002b)
1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.000014	--	CDM (2002b)	NB	--	CDM (2002b)
Octachlorodibenzofuran	0.000014	--	CDM (2002b)	NB	--	CDM (2002b)
Dioxin/furan TCDD toxicity equivalent	0.000014	0.00014	Nosek et al. (1992)	0.000001	0.00001	Murray et al. (1979)
Inorganic Analytes						
Aluminum	120	NB	Carriere et al. (1986)	1.9	19	Ondreicka et al. (1966)
Antimony	NB	--	CDM (2002b)	0.66	NB	Schroeder et al. (1968)
Arsenic	10	40	Stanley et al. (1994)	0.13	1.3	Schroeder and Mitchener (1971)
Barium	21	42	Johnson et al. (1960)	5.1	20	Perry et al. (1983) (NOAEL) Borzelleca et al. (1988) (LOAEL)
Beryllium	NB	--	CDM (2002b)	0.66	--	CDM (2002b)
Cadmium	1.5	20	White and Finley (1978)	1	10	Sutou et al. (1980)
Chromium	0.86	4.3	Haseltine et al. (1985) as cited in Sample et al. (1996)	3.3	69	Mackenzie et al. (1958) (NOAEL) Gross and Heller (1946) (LOAEL)
Cobalt	NB	--	CDM (2002b)	0.5	2	Nation et al. (1983)
Copper	47	62	Mehring et al. (1960)	12	15	Aulerich et al. (1982)
Iron	--	NB	CDM (2002b)	17.9	--	CDM (2002b)

Table 7-3. (cont.)

Analyte	Avian NOAEL (mg/kg-day)	Avian LOAEL (mg/kg-day)	Citation	Mammalian NOAEL (mg/kg-day)	Mammalian LOAEL (mg/kg-day)	Citation
Lead	3.9	11	Pattee (1984) (NOAEL) Edens et al. (1976) (LOAEL)	11	90	Azar et al. (1973)
Manganese	980	NB	Laskey and Edens (1985)	88	280	Laskey et al. (1982)
Mercury	0.032	0.064	Heinz (1974, 1976a,b, 1979)	0.032	0.16	Verschuuren et al. (1976)
Nickel	77	110	Cain and Pafford (1981)	40	80	Ambrose et al. (1976)
Selenium	0.4	0.80	Heinz et al. (1989)	0.2	0.33	Rosenfeld and Beath (1954)
Silver	NB	--	CDM (2002b)	1.81	--	CDM (2002b)
Thallium	0.24	24	Hudson et al. (1984)	0.074	0.74	Formigli et al. (1986)
Vanadium	11	NB	White and Dieter (1978)	0.21	2.1	Domingo et al. (1986)
Zinc	70	120	Jackson et al. (1986)	160	320	Schlicker and Cox (1968)

Note: -- - LOAEL not used in the screening assessment (CDM 2002b)
ARC - Atlantic Richfield Corporation
LOAEL - lowest-observed-adverse-effect level
NB - no benchmark
NOAEL - no-observed-adverse-effect level
OU-3 - Operable Unit 3
PAH - polycyclic aromatic hydrocarbon

Table 7-4. Summary of hazard quotient results for the short-tailed shrew

	NOAEL Hazard Quotient						LOAEL Hazard Quotient					
	Reference			Marsh			Reference			Marsh		
CoPC	Minimum	Maximum	Exceedance Frequency	Minimum	Maximum	Exceedance Frequency	Minimum	Maximum	Exceedance Frequency	Minimum	Maximum	Exceedance Frequency
Semivolatile Organic Compounds												
Hexachlorobenzene	0.72	0.84	0/2	1.1	1.1	1/1	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	6.9	8.2	2/2	11	11	1/1	NA	NA	NA	NA	NA	NA
Pesticides/PCBs												
4,4'-DDT	0.070	0.17	0/3	0.058	1.4	1/10	NA	NA	NA	NA	NA	NA
γ-Chlordane	0.058	0.19	0/3	0.034	3.1	1/10	NA	NA	NA	NA	NA	NA
Polychlorinated biphenyls	0.96	2.9	2/3	1.1	50	10/10	0.50	1.5	2/3	0.58	26	7/10
Inorganic Analytes												
Aluminum	130	350	3/3	160	480	10/10	13	35	3/3	16	48	10/10
Arsenic	20	29	3/3	16	3,700	10/10	2.0	2.9	3/3	1.6	370	10/10
Chromium	0.25	0.81	0/3	0.32	2.3	6/10	0.012	0.039	0/3	0.015	0.11	0/10
Cobalt	1.0	1.7	3/3	1.2	3.3	10/10	0.25	0.42	0/3	0.29	0.82	0/10
Copper	0.65	1.3	2/3	1.1	4.8	10/10	0.52	1.1	1/3	0.87	3.9	8/10
Iron	15	50	3/3	20	170	10/10	NA	NA	NA	NA	NA	NA
Lead	0.49	0.68	0/3	0.40	2.0	1/10	0.059	0.083	0/3	0.049	0.24	0/10
Mercury	2.5	3.2	3/3	2.0	72	10/10	0.49	0.64	0/3	0.39	14	6/10
Selenium	1.0	1.4	3/3	0.91	1.7	7/10	0.61	0.84	0/3	0.55	1.0	1/10
Silver	0.064	0.11	0/3	0.12	1.5	1/10	NA	NA	NA	NA	NA	NA
Vanadium	3.8	8.9	3/3	2.9	17	10/10	0.38	0.89	0/3	0.29	1.7	2/10

Note: Results shown are for chemicals with hazard quotients greater than 1.0.

CoPC - chemical of potential concern
LOAEL - lowest-observed-adverse-effect level
NA - not applicable, no LOAEL TRV
NOAEL - no-observed-adverse-effect level
PCB - polychlorinated biphenyl
TRV - toxicity reference value

Table 7-5. Food-web model results for short-tailed shrew based on mean sediment and prey CoPC data for OU-3 marsh

	Concentration			Daily Exposure			BW	TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Earthworms (mg/kg ww)	Insects (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	Normalized Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
SVOCs[a]											
2,4,5-Trichlorophenol	0.007	0.18	0.18	1.4E-06	0.0026	0.0026	0.17	100	NB	0.0017	--
2,4,6-Trichlorophenol	0.0041	0.15	0.15	8.2E-07	0.0022	0.0022	0.14	NB	NB	--	--
2,4-Dichlorophenol	0.0041	0.2	0.2	8.2E-07	0.0029	0.0029	0.19	0.3	NB	0.64	--
2,4-Dimethylphenol	0.013	0.21	0.21	2.6E-06	0.003	0.003	0.2	50	NB	0.0040	--
2,4-Dinitrophenol	0.085	0.37	0.37	0.000017	0.0053	0.0053	0.36	NB	NB	--	--
2,4-Dinitrotoluene	0.0065	0.14	0.14	1.3E-06	0.002	0.002	0.13	0.2	NB	0.67	--
2,6-Dinitrotoluene	0.0065	0.12	0.12	1.3E-06	0.0017	0.0017	0.12	3.54	NB	0.033	--
2-Chloronaphthalene	0.0085	0.095	0.095	1.7E-06	0.0014	0.0014	0.091	250	NB	0.00037	--
2-Chlorophenol	0.0039	0.18	0.18	7.8E-07	0.0026	0.0026	0.17	5	NB	0.035	--
2-Methyl-4,6-dinitrophenol	0.0039	0.24	0.24	7.8E-07	0.0035	0.0035	0.23	0.42	NB	0.55	--
2-Methylnaphthalene	0.014	0.0023	0.0023	2.8E-06	0.000033	0.000036	0.0024	5	NB	0.00048	--
2-Methylphenol	0.008	0.85	0.85	1.6E-06	0.012	0.012	0.82	50	NB	0.016	--
2-Nitroaniline	0.0065	0.42	0.42	1.3E-06	0.006	0.006	0.4	71.2	NB	0.0057	--
2-Nitrophenol	0.006	0.24	0.24	1.2E-06	0.0035	0.0035	0.23	6.68	NB	0.035	--
3,3'-Dichlorobenzidine	0.0085	13	13	1.7E-06	0.19	0.19	12	NB	NB	--	--
3-Nitroaniline	0.006	0.15	0.15	1.2E-06	0.0022	0.0022	0.14	18	NB	0.008	--
4-Bromophenyl ether	0.0032	0.09	0.09	6.4E-07	0.0013	0.0013	0.086	NB	NB	--	--
4-Chloro-3-methylphenol	0.0048	1.2	1.2	9.6E-07	0.017	0.017	1.2	14.2	NB	0.081	--
4-Chloroaniline	0.0048	0.095	0.095	9.6E-07	0.0014	0.0014	0.091	1.25	NB	0.073	--
4-Chlorophenyl-phenyl ether	0.0046	0.075	0.075	9.2E-07	0.0011	0.0011	0.072	NB	NB	--	--
4-Methylphenol	0.016	0.24	0.24	3.2E-06	0.0035	0.0035	0.23	NB	NB	--	--
4-Nitroaniline	0.008	0.42	0.42	1.6E-06	0.006	0.006	0.4	NB	NB	--	--
4-Nitrophenol	0.07	0.12	0.12	0.000014	0.0017	0.0017	0.12	NB	NB	--	--
Acenaphthene	0.0032	0.00012	0.00012	6.4E-07	1.7E-06	2.4E-06	0.00016	175	NB	0.0000009	--
Acenaphthylene	0.013	0.00008	0.00008	2.6E-06	1.2E-06	3.8E-06	0.00025	NB	NB	--	--
Acetophenone	0.023	0.32	0.32	4.6E-06	0.0046	0.0046	0.31	423	NB	0.00073	--
Anthracene	0.013	0.0016	0.0016	2.6E-06	0.000023	0.000026	0.0017	1,000	NB	0.0000017	--
Atrazine	0.005	0.09	0.09	0.000001	0.0013	0.0013	0.086	3.5	NB	0.025	--
Benz[a]anthracene	0.05	0.003	0.003	0.00001	0.000043	0.000053	0.0036	NB	NB	--	--
Benzaldehyde	0.1	12	12	0.00002	0.17	0.17	12	143	NB	0.081	--
Benzo[a]pyrene	0.06	0.0033	0.0033	0.000012	0.000048	0.00006	0.004	1	NB	0.0040	--
Benzo[b]fluoranthene	0.09	0.0048	0.0048	0.000018	0.000069	0.000087	0.0058	NB	NB	--	--
Benzo[ghi]perylene	0.05	0.0028	0.0028	0.00001	0.00004	0.00005	0.0034	NB	NB	--	--
Benzo[k]fluoranthene	0.034	0.0038	0.0038	6.8E-06	0.000055	0.000062	0.0041	NB	NB	--	--
Biphenyl	0.031	0.075	0.075	6.2E-06	0.0011	0.0011	0.072	50	NB	0.0014	--
Bis[2-chloroethoxy]methane	0.003	0.08	0.08	6E-07	0.0012	0.0012	0.077	13	NB	0.0059	--
Bis[2-chloroethyl]ether	0.017	0.14	0.14	3.4E-06	0.002	0.002	0.13	1.5	NB	0.090	--
Bis[2-chloroisopropyl]ether	0.0028	0.18	0.18	5.6E-07	0.0026	0.0026	0.17	35.8	NB	0.005	--
Bis[2-Ethylhexyl]phthalate	0.17	0.85	0.85	0.000034	0.012	0.012	0.82	3.5	NB	0.230	--
Butylbenzyl phthalate	0.012	0.23	0.23	2.4E-06	0.0033	0.0033	0.22	159	NB	0.0014	--
Caprolactam	0.028	0.21	0.21	5.6E-06	0.003	0.003	0.2	50	NB	0.0040	--
Carbazole	0.0068	0.55	0.55	1.4E-06	0.0079	0.0079	0.53	10	NB	0.053	--

Table 7-5. (cont.)

	Concentration			Daily Exposure			BW	TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Earthworms (mg/kg ww)	Insects (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	Normalized Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Chrysene	0.06	0.0085	0.0085	0.000012	0.00012	0.00013	0.009	NB	NB	--	--
Dibenz[a,h]anthracene	0.018	0.00076	0.00076	3.6E-06	0.000011	0.000015	0.00097	NB	NB	--	--
Dibenzofuran	0.004	0.0013	0.0013	8E-07	0.000019	0.00002	0.0013	12.5	NB	0.00010	--
Diethyl phthalate	0.008	0.15	0.15	1.6E-06	0.0022	0.0022	0.14	4,580	NB	0.000031	--
Dimethyl phthalate	0.0041	0.085	0.085	8.2E-07	0.0012	0.0012	0.082	48	NB	0.0017	--
Di-*n*-butyl phthalate	0.009	0.45	0.45	1.8E-06	0.0065	0.0065	0.43	550	NB	0.00079	--
Di-*n*-octyl phthalate	0.009	0.21	0.21	1.8E-06	0.003	0.003	0.2	17.5	NB	0.012	--
Fluoranthene	0.09	0.0081	0.0081	0.000018	0.00012	0.00013	0.009	125	NB	0.000072	--
Fluorene	0.0064	0.0015	0.0015	1.3E-06	0.000022	0.000023	0.0015	125	NB	0.000012	--
Hexachlorobenzene	0.0048	0.095	0.095	9.6E-07	0.0014	0.0014	0.091	0.08	NB	1.1	--
Hexachlorobutadiene	0.0032	0.14	0.14	6.4E-07	0.002	0.002	0.13	1.74	NB	0.077	--
Hexachlorocyclopentadiene	0.035	80	80	0.000007	1.2	1.2	77	7	NB	11	--
Hexachloroethane	0.005	0.14	0.14	0.000001	0.002	0.002	0.13	1	NB	0.13	--
Indeno[1,2,3-cd]pyrene	0.05	0.0035	0.0035	0.00001	0.00005	0.00006	0.004	NB	NB	--	--
Isophorone	0.0039	0.095	0.095	7.8E-07	0.0014	0.0014	0.091	150	NB	0.00061	--
Naphthalene	0.026	0.0042	0.0042	5.2E-06	0.00006	0.000066	0.0044	71	NB	0.000062	--
Nitrobenzene	0.021	0.16	0.16	4.2E-06	0.0023	0.0023	0.15	12	NB	0.013	--
N-nitroso-di-*n*-propylamine	0.0075	0.14	0.14	1.5E-06	0.002	0.002	0.13	9.6	NB	0.014	--
N-nitrosodiphenylamine	0.005	0.16	0.16	0.000001	0.0023	0.0023	0.15	NB	NB	--	--
Pentachlorophenol	0.015	0.5	0.5	0.000003	0.0072	0.0072	0.48	3	NB	0.16	--
Phenanthrene	0.034	0.0058	0.0058	6.8E-06	0.000084	0.00009	0.006	14	NB	0.00043	--
Phenol	0.07	0.28	0.28	0.000014	0.004	0.004	0.27	60	NB	0.0045	--
Pyrene	0.07	0.007	0.007	0.000014	0.0001	0.00011	0.0077	75	NB	0.00010	--
Total PAHs	0.7	0.06	0.06	0.00014	0.00086	0.001	0.067	1	10	0.067	0.0067
Pesticides/PCBs											
4,4'-DDD	0.009	0.0025	0.00055	1.8E-06	0.000029	0.000031	0.002	2.26	NB	0.00090	--
4,4'-DDE	0.012	0.0036	0.00055	2.4E-06	0.000041	0.000043	0.0029	970	NB	0.0000030	--
4,4'-DDT	0.06	0.022	0.0041	0.000012	0.00025	0.00026	0.017	0.05	NB	0.35	--
Aldrin	0.004	0.0053	0.00011	8E-07	0.000057	0.000058	0.0039	0.25	NB	0.015	--
α-Chlordane	0.0043	0.0065	0.00089	8.6E-07	0.000073	0.000074	0.005	0.045	NB	0.11	--
α-Endosulfan	0.0061	0.014	0.00055	1.2E-06	0.00015	0.00016	0.01	0.6	NB	0.017	--
α-Hexachlorocyclohexane	0.0009	0.0013	0.000085	1.8E-07	0.000014	0.000015	0.00097	1.3	NB	0.00074	--
β-Endosulfan	0.0065	0.0016	0.0013	1.3E-06	0.000022	0.000023	0.0016	0.6	NB	0.0026	--
β-Hexachlorocyclohexane	0.0033	0.0023	0.00011	6.6E-07	0.000025	0.000026	0.0017	0.4	NB	0.0043	--
δ-Hexachlorocyclohexane	0.0015	0.0021	0.00018	3E-07	0.000023	0.000023	0.0015	20	NB	0.000077	--
Dieldrin	0.019	0.0016	0.0014	3.8E-06	0.000022	0.000026	0.0017	0.15	NB	0.012	--
Endosulfan sulfate	0.033	0.0012	0.00055	6.6E-06	0.000015	0.000022	0.0014	NB	NB	--	--
Endrin	0.013	0.0065	0.0033	2.6E-06	0.000082	0.000085	0.0056	0.092	NB	0.061	--
Endrin aldehyde	0.0059	0.0057	0.00026	1.2E-06	0.000062	0.000063	0.0042	NB	NB	--	--
Endrin ketone	0.04	0.0021	0.00065	0.000008	0.000025	0.000033	0.0022	NB	NB	--	--
γ-Chlordane	0.05	0.042	0.0038	0.00001	0.00047	0.00048	0.032	0.045	NB	0.71	--
γ-Hexachlorocyclohexane	0.0011	0.011	0.00015	2.2E-07	0.00012	0.00012	0.008	10	NB	0.00080	--
Heptachlor	0.0083	0.0011	0.00086	1.7E-06	0.000015	0.000017	0.0011	0.1	NB	0.011	--

Table 7-5. (cont.)

Analyte	Concentration			Daily Exposure		Total Daily Intake	BW Normalized Exposure	TRV		Hazard Quotient	
	Sediment (mg/kg dw)	Earthworms (mg/kg ww)	Insects (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	(mg/day)	(mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Heptachlor epoxide	0.019	0.098	0.002	3.8E-06	0.0011	0.0011	0.071	8	NB	0.0089	--
Methoxychlor	0.027	0.006	0.00014	5.4E-06	0.000066	0.000071	0.0047	4	NB	0.0012	--
Toxaphene	0.6	0.55	0.024	0.00012	0.006	0.0061	0.41	1.6	NB	0.26	--
PCBs	2.3	2	0.075	0.00046	0.021	0.022	1.5	0.14	0.27	10	5.4
Inorganic Analytes											
Aluminum	13,000	570	90	2.7	6.5	9.2	610	1.9	19	320	32
Antimony	12	0.061	0.022	0.0024	0.00074	0.0031	0.21	0.66	NB	0.31	--
Arsenic	3,400	46	0.59	0.68	0.5	1.2	79	0.13	1.3	610	61
Barium	85	1.9	1.2	0.017	0.025	0.042	2.8	5.1	20	0.55	0.14
Beryllium	0.7	0.02	0.0028	0.00014	0.00022	0.00036	0.024	0.66	NB	0.037	--
Cadmium	1.4	0.38	0.91	0.00028	0.0073	0.0076	0.51	1	10	0.51	0.051
Chromium	150	2.8	0.89	0.03	0.033	0.063	4.2	3.3	69	1.3	0.061
Cobalt	13	1.1	0.093	0.0025	0.012	0.015	0.99	0.5	2	2.0	0.49
Copper	640	16	42	0.13	0.33	0.46	30	12	15	2.5	2.0
Iron	46,000	820	170	9.2	9.4	19	1,200	17.9	NB	70	--
Lead	230	6.4	0.74	0.047	0.071	0.12	7.9	11	90	0.72	0.088
Manganese	510	7.3	12	0.1	0.12	0.22	15	88	280	0.17	0.053
Mercury	19	0.58	0.047	0.0039	0.0064	0.01	0.69	0.032	0.16	21	4.3
Nickel	58	1.4	0.72	0.012	0.017	0.029	1.9	40	80	0.048	0.024
Selenium	4.1	0.25	0.2	0.00082	0.0034	0.0042	0.28	0.2	0.33	1.4	0.85
Silver	31	0.49	0.53	0.0062	0.0072	0.013	0.9	1.81	NB	0.50	--
Thallium	0.13	0.019	0.0026	0.000026	0.00021	0.00024	0.016	0.074	0.74	0.21	0.021
Vanadium	59	1.2	0.24	0.012	0.014	0.026	1.7	0.21	2.1	8.2	0.82
Zinc	280	20	55	0.056	0.42	0.47	32	160	320	0.20	0.10
Calcium	5,200	670	1,900	1	14	15	1,000	NB	NB	--	--
Magnesium	3,700	170	340	0.74	3.1	3.8	250	NB	NB	--	--
Potassium	1,800	1,500	2,600	0.35	26	26	1,800	NB	NB	--	--
Sodium	3,500	1,000	770	0.7	14	14	960	NB	NB	--	--

Note: Hazard quotients greater than 1.0 are boxed.

--	- not applicable	OU-3	- Operable Unit 3
BW	- body weight	SVOC	- semivolatile organic compound
CoPC	- chemical of potential concern	PAH	- polycyclic aromatic hydrocarbon
dw	- dry weight	PCB	- polychlorinated biphenyl
LOAEL	- lowest observed adverse effect level	TRV	- toxicity reference value
NB	- no benchmark	ww	- wet weight
NOAEL	- no observed adverse effect level		

[a] SVOCs not analyzed in insects, and earthworm concentrations used as surrogate values for calculations.

Table 7-6. Summary of hazard quotient results for the muskrat

	Reference		Marsh	
CoPC	NOAEL HQ	LOAEL HQ	NOAEL HQ	LOAEL HQ
Aluminum	75	7.5	86	8.6
Arsenic	6.2	0.62	59	5.9
Chromium	0.38	0.018	1.2	0.056
Copper	0.39	0.31	1.2	0.95
Iron	24	NA	49	NA
Mercury	0.55	0.11	7.5	1.5
Vanadium	5.2	0.52	3.9	0.39

Note: Results shown are for chemicals with hazard quotients greater than 1.0.

CoPC - chemical of potential concern
HQ - hazard quotient
LOAEL - lowest-observed-adverse-effect level
NA - not applicable, no LOAEL TRV
NOAEL - no-observed-adverse-effect level
TRV - toxicity reference value

Table 7-7. Summary of hazard quotient results for the marsh wren

	NOAEL Hazard Quotient						LOAEL Hazard Quotient					
	Reference			Marsh			Reference			Marsh		
CoPC	Minimum	Maximum	Exceedance Frequency	Minimum	Maximum	Exceedance Frequency	Minimum	Maximum	Exceedance Frequency	Minimum	Maximum	Exceedance Frequency
Pesticides/PCBs												
PCBs	0.034	0.12	0/3	0.17	3.9	1/10	0.0078	0.027	0/3	0.038	0.89	0/10
Inorganic Analytes												
Aluminum	1.1	3.7	3/3	1.8	4.9	10/10	NA	NA	NA	NA	NA	NA
Arsenic	0.075	0.17	0/3	0.091	49	3/10	0.019	0.041	0/3	0.023	12	2/10
Chromium	0.94	3.4	2/3	1.4	11	10/10	0.19	0.69	0/3	0.28	2.2	4/10
Copper	0.42	0.63	0/3	0.75	1.5	6/10	0.32	0.48	0/3	0.57	1.1	2/10
Lead	0.80	1.4	2/3	0.57	2.6	9/10	0.28	0.49	0/3	0.20	0.92	0/10
Mercury	1.1	4.8	3/3	1.4	130	10/10	0.56	2.4	2/3	0.72	63	8/10

Note: Results shown are for chemicals with hazard quotients greater than 1.0.

CoPC - chemical of potential concern
LOAEL - lowest-observed-adverse-effect level
NA - not applicable, no LOAEL TRV
NOAEL - no-observed-adverse-effect level
PCB - polychlorinated biphenyl
TRV - toxicity reference value

Table 7-8. Food-web model results for short-tailed shrew based on mean sediment and prey CoPC data for OU-3 marsh, based on the combined 1997/1999 and 2004 data

	Concentration			Daily Exposure			BW	TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Earthworms (mg/kg ww)	Insects (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	Normalized Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
SVOCs[a]											
2,4,5-Trichlorophenol	0.81	0.18	0.18	0.00016	0.0026	0.0028	0.18	100	NB	0.0018	--
2,4,6-Trichlorophenol	0.32	0.15	0.15	0.000065	0.0022	0.0022	0.15	NB	NB	--	--
2,4-Dichlorophenol	0.32	0.2	0.2	0.000065	0.0029	0.0029	0.2	0.3	NB	0.65	--
2,4-Dimethylphenol	0.33	0.21	0.21	0.000066	0.003	0.0031	0.21	50	NB	0.0041	--
2,4-Dinitrophenol	0.85	0.37	0.37	0.00017	0.0053	0.0055	0.37	NB	NB	--	--
2,4-Dinitrotoluene	0.33	0.14	0.14	0.000066	0.002	0.0021	0.14	0.2	NB	0.69	--
2,6-Dinitrotoluene	0.33	0.12	0.12	0.000066	0.0017	0.0018	0.12	3.54	NB	0.034	--
2-Chloronaphthalene	0.33	0.095	0.095	0.000066	0.0014	0.0014	0.096	250	NB	0.00038	--
2-Chlorophenol	0.32	0.18	0.18	0.000065	0.0026	0.0027	0.18	5	NB	0.035	--
2-Methyl-4,6-dinitrophenol	0.81	0.24	0.24	0.00016	0.0035	0.0036	0.24	0.42	NB	0.57	--
2-Methylnaphthalene	0.33	0.0023	0.0023	0.000066	0.000033	0.000099	0.0066	5	NB	0.00132	--
2-Methylphenol	0.33	0.85	0.85	0.000066	0.012	0.012	0.82	50	NB	0.016	--
2-Nitroaniline	0.81	0.42	0.42	0.00016	0.006	0.0062	0.41	71.2	NB	0.0058	--
2-Nitrophenol	0.33	0.24	0.24	0.000065	0.0035	0.0035	0.23	6.68	NB	0.035	--
3,3'-Dichlorobenzidine	0.33	13	13	0.000065	0.19	0.19	12	NB	NB	--	--
3-Nitroaniline	0.81	0.15	0.15	0.00016	0.0022	0.0023	0.15	18	NB	0.009	--
4-Bromophenyl ether	0.32	0.09	0.09	0.000065	0.0013	0.0014	0.091	NB	NB	--	--
4-Chloro-3-methylphenol	0.33	1.2	1.2	0.000065	0.017	0.017	1.2	14.2	NB	0.081	--
4-Chloroaniline	0.33	0.095	0.095	0.000065	0.0014	0.0014	0.096	1.25	NB	0.076	--
4-Chlorophenyl-phenyl ether	0.33	0.075	0.075	0.000065	0.0011	0.0011	0.076	NB	NB	--	--
4-Methylphenol	0.33	0.24	0.24	0.000066	0.0035	0.0035	0.23	NB	NB	--	--
4-Nitroaniline	0.81	0.42	0.42	0.00016	0.006	0.0062	0.41	NB	NB	--	--
4-Nitrophenol	0.85	0.12	0.12	0.00017	0.0017	0.0019	0.13	NB	NB	--	--
Acenaphthene	0.32	0.00012	0.00012	0.000065	1.7E-06	0.000067	0.0045	175	NB	0.0000255	--
Acenaphthylene	0.31	0.00008	0.00008	0.000063	1.2E-06	0.000064	0.0042	NB	NB	--	--
Acetophenone	0.29	0.32	0.32	0.000059	0.0046	0.0047	0.31	423	NB	0.00074	--
Anthracene	0.31	0.0016	0.0016	0.000063	0.000023	0.000086	0.0057	1,000	NB	0.0000057	--
Atrazine	0.25	0.09	0.09	0.00005	0.0013	0.0013	0.09	3.5	NB	0.026	--
Benz[a]anthracene	0.27	0.003	0.003	0.000054	0.000043	0.000097	0.0065	NB	NB	--	--
Benzaldehyde	0.23	12	12	0.000046	0.17	0.17	12	143	NB	0.081	--
Benzo[a]pyrene	0.24	0.0033	0.0033	0.000048	0.000048	0.000096	0.0064	1	NB	0.0064	--
Benzo[b]fluoranthene	0.35	0.0048	0.0048	0.000071	0.000069	0.00014	0.0094	NB	NB	--	--
Benzo[ghi]perylene	0.28	0.0028	0.0028	0.000056	0.00004	0.000096	0.0064	NB	NB	--	--
Benzo[k]fluoranthene	0.29	0.0038	0.0038	0.000058	0.000055	0.00011	0.0075	NB	NB	--	--
Biphenyl	0.31	0.075	0.075	0.000063	0.0011	0.0011	0.076	50	NB	0.0015	--
Bis[2-chloroethoxy]methane	0.32	0.08	0.08	0.000065	0.0012	0.0012	0.081	13	NB	0.0062	--
Bis[2-chloroethyl]ether	0.33	0.14	0.14	0.000066	0.002	0.0021	0.14	1.5	NB	0.093	--
Bis[2-chloroisopropyl]ether	0.32	0.18	0.18	0.000065	0.0026	0.0027	0.18	35.8	NB	0.005	--
Bis[2-Ethylhexyl]phthalate	3.5	0.85	0.85	0.0007	0.012	0.013	0.86	3.5	NB	0.246	--
Butylbenzyl phthalate	0.3	0.23	0.23	0.000061	0.0033	0.0034	0.22	159	NB	0.0014	--

Table 7-8. (cont.)

Analyte	Concentration Sediment (mg/kg dw)	Concentration Earthworms (mg/kg ww)	Concentration Insects (mg/kg ww)	Daily Exposure Sediment (mg/day)	Daily Exposure Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV NOAEL (mg/kg-day)	TRV LOAEL (mg/kg-day)	Hazard Quotient NOAEL Hazard Quotient	Hazard Quotient LOAEL Hazard Quotient
Caprolactam	0.27	0.21	0.21	0.000054	0.003	0.0031	0.21	50	NB	0.0041	--
Carbazole	0.33	0.55	0.55	0.000065	0.0079	0.008	0.53	10	NB	0.053	--
Chrysene	0.26	0.0085	0.0085	0.000052	0.00012	0.00017	0.012	NB	NB	--	--
Dibenz[a,h]anthracene	0.31	0.00076	0.00076	0.000062	0.000011	0.000073	0.0049	NB	NB	--	--
Dibenzofuran	0.32	0.0013	0.0013	0.000065	0.000019	0.000084	0.0056	12.5	NB	0.00045	--
Diethyl phthalate	0.33	0.15	0.15	0.000066	0.0022	0.0022	0.15	4,580	NB	0.000032	--
Dimethyl phthalate	0.32	0.085	0.085	0.000065	0.0012	0.0013	0.086	48	NB	0.0018	--
Di-*n*-butyl phthalate	0.42	0.45	0.45	0.000083	0.0065	0.0066	0.44	550	NB	0.00080	--
Di-*n*-octyl phthalate	0.51	0.21	0.21	0.0001	0.003	0.0031	0.21	17.5	NB	0.012	--
Fluoranthene	0.26	0.0081	0.0081	0.000052	0.00012	0.00017	0.011	125	NB	0.000090	--
Fluorene	0.32	0.0015	0.0015	0.000065	0.000022	0.000087	0.0058	125	NB	0.000046	--
Hexachlorobenzene	0.33	0.095	0.095	0.000065	0.0014	0.0014	0.096	0.08	NB	$\boxed{1.2}$	--
Hexachlorobutadiene	0.32	0.14	0.14	0.000065	0.002	0.0021	0.14	1.74	NB	0.080	--
Hexachlorocyclopentadiene	0.34	80	80	0.000068	1.2	1.2	77	7	NB	$\boxed{11}$	--
Hexachloroethane	0.33	0.14	0.14	0.000065	0.002	0.0021	0.14	1	NB	0.14	--
Indeno[1,2,3-cd]pyrene	0.25	0.0035	0.0035	0.00005	0.00005	0.0001	0.0067	NB	NB	--	--
Isophorone	0.33	0.095	0.095	0.000066	0.0014	0.0014	0.096	150	NB	0.00064	--
Naphthalene	0.31	0.0042	0.0042	0.000062	0.00006	0.00012	0.0082	71	NB	0.000115	--
Nitrobenzene	0.33	0.16	0.16	0.000066	0.0023	0.0024	0.16	12	NB	0.013	--
N-nitroso-di-*n*-propylamine	0.33	0.14	0.14	0.000066	0.002	0.0021	0.14	9.6	NB	0.014	--
N-nitrosodiphenylamine	0.33	0.16	0.16	0.000066	0.0023	0.0024	0.16	NB	NB	--	--
Pentachlorophenol	0.82	0.5	0.5	0.00017	0.0072	0.0074	0.49	3	NB	0.16	--
Phenanthrene	0.3	0.0058	0.0058	0.000061	0.000084	0.00014	0.0096	14	NB	0.00069	--
Phenol	0.48	0.28	0.28	0.000097	0.004	0.0041	0.28	60	NB	0.0046	--
Pyrene	0.37	0.007	0.007	0.000075	0.0001	0.00018	0.012	75	NB	0.00016	--
Total PAHs	4.5	0.06	0.06	0.0009	0.00086	0.0018	0.12	1	10	0.118	0.0118
Pesticides/PCBs						0.000	0.0000				
4,4'-DDD	0.043	0.0025	0.00055	8.6E-06	0.000029	0.000037	0.0025	2.26	NB	0.00110	--
4,4'-DDE	0.029	0.0036	0.00055	5.9E-06	0.000041	0.000047	0.0031	970	NB	0.0000032	--
4,4'-DDT	0.053	0.022	0.0041	0.000011	0.00025	0.00026	0.017	0.05	NB	0.34	--
Aldrin	0.014	0.0053	0.00011	2.8E-06	0.000057	0.00006	0.004	0.25	NB	0.016	--
α-Chlordane	0.0064	0.0065	0.00089	1.3E-06	0.000073	0.000075	0.005	0.045	NB	0.11	--
α-Endosulfan	0.013	0.014	0.00055	2.5E-06	0.00015	0.00016	0.01	0.6	NB	0.017	--
α-Hexachlorocyclohexane	0.011	0.0013	8.5E-05	2.3E-06	0.000014	0.000017	0.0011	1.3	NB	0.00085	--
β-Endosulfan	0.023	0.0016	0.0013	4.7E-06	0.000022	0.000027	0.0018	0.6	NB	0.0030	--
β-Hexachlorocyclohexane	0.012	0.0023	0.00011	2.5E-06	0.000025	0.000028	0.0018	0.4	NB	0.0046	--
δ-Hexachlorocyclohexane	0.013	0.0021	0.00018	2.4E-06	0.000023	0.000025	0.0017	20	NB	0.000084	--
Dieldrin	0.037	0.0016	0.0014	7.4E-06	0.000022	0.00003	0.002	0.15	NB	0.013	--
Endosulfan sulfate	0.022	0.0012	0.00055	4.5E-06	0.000015	0.000019	0.0013	NB	NB	--	--
Endrin	0.029	0.0065	0.0033	5.8E-06	0.000082	0.000088	0.0059	0.092	NB	0.064	--
Endrin aldehyde	0.024	0.0057	0.00026	4.7E-06	0.000062	0.000067	0.0044	NB	NB	--	--
Endrin ketone	0.031	0.0021	0.00065	6.2E-06	0.000025	0.000031	0.0021	NB	NB	--	--

Table 7-8. (cont.)

Analyte	Concentration: Sediment (mg/kg dw)	Concentration: Earthworms (mg/kg ww)	Concentration: Insects (mg/kg ww)	Daily Exposure: Sediment (mg/day)	Daily Exposure: Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV: NOAEL (mg/kg-day)	TRV: LOAEL (mg/kg-day)	Hazard Quotient: NOAEL Hazard Quotient	Hazard Quotient: LOAEL Hazard Quotient
γ-Chlordane	0.057	0.042	0.0038	0.000012	0.00047	0.00048	0.032	0.045	NB	0.71	--
γ-Hexachlorocyclohexane	0.012	0.011	0.00015	2.4E-06	0.00012	0.00012	0.0081	10	NB	0.00081	--
Heptachlor	0.012	0.0011	0.00086	2.4E-06	0.000015	0.000017	0.0012	0.1	NB	0.012	--
Heptachlor epoxide	0.035	0.098	0.002	7.6E-06	0.0011	0.0011	0.072	8	NB	0.0089	--
Methoxychlor	21	0.006	0.00014	0.0042	0.000066	0.0043	0.29	4	NB	0.072	--
Toxaphene	1.2	0.55	0.024	0.00025	0.006	0.0063	0.42	1.6	NB	0.26	--
PCBs	4.9	2	0.075	0.00099	0.021	0.022	1.5	0.14	0.27	$\boxed{11}$	$\boxed{5.6}$
Inorganic Analytes						0.000	0.0000				
Aluminum	9,900	570	90	2	6.5	8.5	570	1.9	19	$\boxed{299}$	$\boxed{30}$
Antimony	7.3	0.061	0.022	0.0015	0.00074	0.0022	0.15	0.66	NB	0.22	--
Arsenic	2,000	46	0.59	0.40	0.5	0.89	60	0.13	1.3	$\boxed{460}$	$\boxed{46}$
Barium	77	1.9	1.2	0.016	0.025	0.04	2.7	5.1	20	0.53	0.13
Beryllium	0.86	0.02	0.0028	0.00017	0.00022	0.00039	0.026	0.66	NB	0.040	--
Cadmium	1.6	0.38	0.91	0.00032	0.0073	0.0076	0.51	1	10	0.51	0.051
Chromium	580	2.8	0.89	0.12	0.033	0.15	10	3.3	69	$\boxed{3.0}$	0.144
Cobalt	14	1.1	0.093	0.0028	0.012	0.015	1	0.5	2	$\boxed{2.0}$	0.50
Copper	800	16	42	0.16	0.33	0.49	33	12	15	$\boxed{2.7}$	$\boxed{2.2}$
Iron	71,000	820	170	14	9.4	24	1,600	17.9	NB	$\boxed{88}$	--
Lead	210	6.4	0.74	0.042	0.071	0.11	7.5	11	90	0.68	0.084
Manganese	2,400	7.3	12	0.49	0.12	0.61	41	88	280	0.47	0.146
Mercury	35	0.58	0.047	0.007	0.0064	0.013	0.89	0.032	0.16	$\boxed{28}$	$\boxed{5.6}$
Nickel	110	1.4	0.72	0.022	0.017	0.039	2.6	40	80	0.065	0.033
Selenium	3	0.25	0.2	0.00061	0.0034	0.004	0.27	0.2	0.33	$\boxed{1.3}$	0.81
Silver	19	0.49	0.53	0.0039	0.0072	0.011	0.74	1.81	NB	0.41	--
Thallium	1.4	0.019	0.0026	0.00027	0.00021	0.00049	0.032	0.074	0.74	0.44	0.044
Vanadium	57	1.2	0.24	0.011	0.014	0.025	1.7	0.21	2.1	$\boxed{8.0}$	0.80
Zinc	230	20	55	0.046	0.42	0.46	31	160	320	0.19	0.10
Calcium	6,300	670	1,900	1.3	14	15	1,000	NB	NB	--	--
Magnesium	530	170	340	0.11	3.1	3.2	210	NB	NB	--	--
Potassium	1,300	1,500	2,600	0.26	26	26	1,700	NB	NB	--	--
Sodium	2,400	1,000	770	0.49	14	14	950	NB	NB	--	--

Note: Hazard quotients greater than 1.0 are boxed.

-- - not applicable
BW - body weight
CoPC - chemical of potential concern
dw - dry weight
LOAEL - lowest observed adverse effect level
NB - no benchmark
NOAEL - no observed adverse effect level
OU-3 - Operable Unit 3
PAH - polycyclic aromatic hydrocarbon
PCB - polychlorinated biphenyl
TRV - toxicity reference value
ww - wet weight

[a] Semivolatile organic compounds not analyzed in insects, and earthworm concentrations used as surrogate values for calculations

Table 7-9. Food-web model results for marsh wren based on mean sediment and prey CoPC data for OU-3 marsh

	Concentration			Daily Exposure			BW	TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Insects (mg/kg ww)	Worms (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	Normalized Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Pesticides/PCBs											
4,4'-DDD	0.009	0.00055	0.0024	0.000	0.000	0.000	0.0009	57.9	NB	0.000016	--
4,4'-DDE	0.012	0.00055	0.013	0.000	0.000	0.000	0.0020	82.9	NB	0.000024	--
4,4'-DDT	0.06	0.0041	0.017	0.000	0.000	0.000	0.0065	0.5	NB	0.013	--
Aldrin	0.004	0.00011	0.0091	0.000	0.000	0.000	0.0010	3.4	NB	0.00030	--
α-Chlordane	0.0043	0.00089	0.0024	0.000	0.000	0.000	0.0011	0.282	NB	0.0038	--
α-Endosulfan	0.0061	0.00055	0.0012	0.000	0.000	0.000	0.0007	NB	NB	--	--
α-Hexachlorocyclohexane	0.0009	0.000085	0.0044	0.000	0.000	0.000	0.0005	NB	NB	--	--
β-Endosulfan	0.0065	0.0013	0.012	0.000	0.000	0.000	0.0023	NB	NB	--	--
β-Hexachlorocyclohexane	0.0033	0.00011	0.0019	0.000	0.000	0.000	0.0004	NB	NB	--	--
δ-Hexachlorocyclohexane	0.0015	0.00018	0.0023	0.000	0.000	0.000	0.0004	NB	NB	--	--
Dieldrin	0.019	0.0014	0.0016	0.000	0.000	0.000	0.0018	0.077	NB	0.024	--
Endosulfan sulfate	0.033	0.00055	0.00049	0.000	0.000	0.000	0.0014	NB	NB	--	--
Endrin	0.013	0.0033	0.0035	0.000	0.000	0.000	0.0034	0.01	NB	0.34	--
Endrin aldehyde	0.0059	0.00026	0.00048	0.000	0.000	0.000	0.0004	NB	NB	--	--
Endrin ketone	0.04	0.00065	0.0043	0.000	0.000	0.000	0.0020	NB	NB	--	--
γ-Chlordane	0.05	0.0038	0.064	0.000	0.000	0.000	0.0100	0.282	NB	0.037	--
γ-Hexachlorocyclohexane	0.0011	0.00015	0.0016	0.000	0.000	0.000	0.0003	42.5	NB	0.000007	--
Heptachlor	0.0083	0.00086	0.00085	0.000	0.000	0.000	0.0010	9.2	NB	0.00011	--
Heptachlor epoxide	0.019	0.002	0.024	0.000	0.000	0.000	0.0043	NB	NB	--	--
Methoxychlor	0.027	0.00014	0.0083	0.000	0.000	0.000	0.0016	10	NB	0.00016	--
Toxaphene	0.6	0.024	0.19	0.000	0.000	0.001	0.0530	NB	NB	--	--
PCBs	2.3	0.075	2.3	0.001	0.003	0.003	0.3300	0.41	1.8	0.81	0.18
Inorganic Analytes											
Aluminum	13,000	90	360	3.600	1.100	4.700	470	120	NB	$\boxed{3.9}$	--
Antimony	12	0.022	0.049	0.003	0.000	0.003	0.3400	NB	NB	--	--
Arsenic	3400	0.59	15	0.930	0.018	0.950	95	10	40	$\boxed{9.5}$	$\boxed{2.4}$
Barium	85	1.2	7.2	0.023	0.016	0.040	4	21	42	0.19	0.09
Beryllium	0.7	0.0028	0.014	0.000	0.000	0.000	0.0230	NB	NB	--	--
Cadmium	1.4	0.91	0.27	0.000	0.008	0.008	0.8100	1.5	20	0.54	0.040
Chromium	150	0.89	2	0.041	0.009	0.050	5	0.86	4.3	$\boxed{5.8}$	$\boxed{1.2}$
Cobalt	13	0.093	0.26	0.003	0.001	0.004	0.4400	NB	NB	--	--
Copper	640	42	23	0.170	0.360	0.540	54	47	62	$\boxed{1.1}$	0.87
Iron	46,000	170	530	13.000	1.800	14.000	1,400	NB	NB	--	--
Lead	230	0.74	4.4	0.064	0.010	0.074	7.4000	3.9	11	$\boxed{1.9}$	0.67
Manganese	510	12	3.3	0.140	0.100	0.240	24	980	NB	0.02	--
Mercury	19	0.047	6.2	0.005	0.006	0.011	1.1000	0.032	0.064	$\boxed{35.3}$	$\boxed{17.7}$
Nickel	58	0.72	0.81	0.016	0.007	0.023	2.3000	77	110	0.029	0.020
Selenium	4.1	0.2	0.18	0.001	0.002	0.003	0.2900	0.4	0.8	0.73	0.37
Silver	31	0.53	0.73	0.009	0.005	0.013	1.3000	NB	NB	--	--
Thallium	0.13	0.0026	0.012	0.000	0.000	0.000	0.0068	0.24	24	0.028	0.00028
Vanadium	59	0.24	0.82	0.016	0.003	0.019	1.9000	11	NB	0.17	--

Table 7-9. (cont.)

Analyte	Concentration: Sediment (mg/kg dw)	Concentration: Insects (mg/kg ww)	Concentration: Worms (mg/kg ww)	Daily Exposure: Sediment (mg/day)	Daily Exposure: Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV: NOAEL (mg/kg-day)	TRV: LOAEL (mg/kg-day)	Hazard Quotient: NOAEL Hazard Quotient	Hazard Quotient: LOAEL Hazard Quotient
Zinc	280	55	33	0.077	0.480	0.560	56	70	120	0.80	0.47
Calcium	5,200	1,900	220	1.400	16.000	17.000	1,700	NB	NB	--	--
Magnesium	3,700	340	130	1.000	2.900	3.900	390	NB	NB	--	--
Potassium	1,800	2,600	1,200	0.480	22.000	23.000	2,300	NB	NB	--	--
Sodium	3,500	770	570	0.960	6.800	7.800	780	NB	NB	--	--

Note: Hazard quotients greater than 1.0 are boxed.

-- - not applicable
BW - body weight
CoPC - chemical of potential concern
dw - dry weight
LOAEL - lowest observed adverse effect level
NB - no benchmark
NOAEL - no observed adverse effect level
OU-3 - Operable Unit 3
PCB - polychlorinated biphenyl
TRV - toxicity reference value
ww - wet weight

Table 7-10. Food-web model results for marsh wren based on mean sediment and prey CoPC data for OU-3 marsh, based on the combined 1997/1999 and 2004 data

	Concentration			Daily Exposure			BW	TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Insects (mg/kg ww)	Worms (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	Normalized Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Pesticides/PCBs											
4,4'-DDD	0.043	0.00055	0.0024	0.000012	0.000007	0.00002	0.0018	57.9	NB	0.000032	--
4,4'-DDE	0.029	0.00055	0.013	0.000008	0.000016	0.00002	0.0024	82.9	NB	0.000029	--
4,4'-DDT	0.053	0.0041	0.017	0.000014	0.000049	0.00006	0.0064	0.5	NB	0.013	--
Aldrin	0.014	0.00011	0.0091	0.000004	0.000009	0.00001	0.0013	3.4	NB	0.00038	--
α-Chlordane	0.0064	0.00089	0.0024	0.000002	0.000009	0.00001	0.0011	0.282	NB	0.0040	--
α-Endosulfan	0.013	0.00055	0.0012	0.000004	0.000006	0.00001	0.0009	NB	NB	--	--
α-Hexachlorocyclohexane	0.011	0.000085	0.0044	0.000003	0.000005	0.00001	0.0008	NB	NB	--	--
β-Endosulfan	0.023	0.0013	0.012	0.000006	0.000022	0.00003	0.0028	NB	NB	--	--
β-Hexachlorocyclohexane	0.012	0.00011	0.0019	0.000003	0.000003	0.00001	0.0006	NB	NB	--	--
δ-Hexachlorocyclohexane	0.013	0.00018	0.0023	0.000003	0.000004	0.00001	0.0007	NB	NB	--	--
Dieldrin	0.037	0.0014	0.0016	0.000010	0.000013	0.00002	0.0023	0.077	NB	0.030	--
Endosulfan sulfate	0.022	0.00055	0.00049	0.000006	0.000005	0.00001	0.0011	NB	NB	--	--
Endrin	0.029	0.0033	0.0035	0.000008	0.000030	0.00004	0.0038	0.01	NB	0.38	--
Endrin aldehyde	0.024	0.00026	0.00048	0.000006	0.000003	0.00001	0.0009	NB	NB	--	--
Endrin ketone	0.031	0.00065	0.0043	0.000008	0.000009	0.00002	0.0018	NB	NB	--	--
γ-Chlordane	0.057	0.0038	0.064	0.000016	0.000089	0.00011	0.0110	0.282	NB	0.037	--
γ-Hexachlorocyclohexane	0.012	0.00015	0.0016	0.000003	0.000003	0.00001	0.0006	42.5	NB	0.000014	--
Heptachlor	0.012	0.00086	0.00085	0.000003	0.000008	0.00001	0.0011	9.2	NB	0.00012	--
Heptachlor epoxide	0.034	0.002	0.024	0.000009	0.000038	0.00005	0.0048	NB	NB	--	--
Methoxychlor	21	0.00014	0.0083	0.0058	0.000009	0.0058	0.58	10	NB	0.058	--
Toxaphene	1.2	0.024	0.19	0.000340	0.000370	0.001	0.0710	NB	NB	--	--
PCBs	4.9	0.075	2.3	0.001	0.003	0.004	0.4000	0.41	1.8	0.98	0.22
Inorganic Analytes											
Aluminum	9,900	90	360	2.700	1.100	3.8	380	120	NB	$\boxed{3.1}$	--
Antimony	7.3	0.022	0.049	0.002	0.000	0.0022	0.22	NB	NB	--	--
Arsenic	2,000	0.59	15	0.53	0.018	0.55	55	10	40	$\boxed{5.5}$	$\boxed{1.4}$
Barium	77	1.2	7.2	0.021	0.016	0.038	3.8	21	42	0.18	0.09
Beryllium	0.86	0.0028	0.014	0.000	0.000	0.00027	0.027	NB	NB	--	--
Cadmium	1.6	0.91	0.27	0.000	0.008	0.0081	0.81	1.5	20	0.54	0.041
Chromium	580	0.89	2	0.160	0.009	0.17	17	0.86	4.3	$\boxed{19.4}$	$\boxed{3.9}$
Cobalt	14	0.093	0.26	0.004	0.001	0.0049	0.49	NB	NB	--	--
Copper	800	42	23	0.220	0.360	0.58	58	47	62	$\boxed{1.2}$	0.94
Iron	71,000	170	530	19.000	1.800	21	2,100	NB	NB	--	--
Lead	210	0.74	4.4	0.056	0.010	0.067	6.7	3.9	11	$\boxed{1.7}$	0.61
Manganese	530	12	3.3	0.150	0.100	0.25	25	980	NB	0.03	--
Mercury	35	0.047	6.2	0.010	0.006	0.015	1.5	0.032	0.064	$\boxed{48.4}$	$\boxed{24.2}$
Nickel	110	0.72	0.81	0.030	0.007	0.037	3.7	77	110	0.047	0.033
Selenium	3	0.2	0.18	0.001	0.002	0.0026	0.26	0.4	0.8	0.66	0.33
Silver	19	0.53	0.73	0.005	0.005	0.01	1	NB	NB	--	--
Thallium	1.4	0.0026	0.012	0.000	0.000	0.00041	0.041	0.24	24	0.169	0.00169

Table 7-10. (cont.)

Analyte	Concentration: Sediment (mg/kg dw)	Concentration: Insects (mg/kg ww)	Concentration: Worms (mg/kg ww)	Daily Exposure: Sediment (mg/day)	Daily Exposure: Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV: NOAEL (mg/kg-day)	TRV: LOAEL (mg/kg-day)	Hazard Quotient: NOAEL Hazard Quotient	Hazard Quotient: LOAEL Hazard Quotient
Vanadium	57	0.24	0.82	0.016	0.003	0.018	1.8	11	NB	0.17	--
Zinc	230	55	33	0.063	0.480	0.55	55	70	120	0.78	0.46
Calcium	6,300	1,900	220	1.700	16.000	17	1,700	NB	NB	--	--
Magnesium	2,400	340	130	0.670	2.900	3.6	360	NB	NB	--	--
Potassium	1,300	2,600	1,200	0.350	22.000	23	2,300	NB	NB	--	--
Sodium	2,400	770	570	0.670	6.800	7.5	750	NB	NB	--	--

Note: Hazard quotients greater than 1.0 are boxed.

-- - not applicable
BW - body weight
CoPC - chemical of potential concern
dw - dry weight
LOAEL - lowest observed adverse effect level
NB - no benchmark
NOAEL - no observed adverse effect level
OU-3 - Operable Unit 3
PCB - polychlorinated biphenyl
TRV - toxicity reference value
ww - wet weight

Table 7-11. Food-web model results for osprey based on mean sediment and prey CoPC data for river, based on the combined 1997/1999 and 2004 data

Analyte	Concentration		Daily Exposure		Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	Area Use Adjusted Exposure (mg/kg-day)	TRV		Hazard Quotient	
	Sediment (mg/kg dw)	Fish (mg/kg ww)	Sediment (mg/day)	Food (mg/day)				NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
VOCs											
1,1,1-Trichloroethane	0.014	0.005	0.000025	0.0018	0.0018	0.0011	0.0000033	NB	NB	--	--
1,1,2,2-Tetrachloroethane	0.014	0.005	0.000025	0.0018	0.0018	0.0011	0.0000033	NB	NB	--	--
1,1,2-Trichloroethane	0.014	0.005	0.000025	0.0018	0.0018	0.0011	0.0000033	NB	NB	--	--
1,1-Dichloroethane	0.014	0.005	0.000025	0.0018	0.0018	0.0011	0.0000033	NB	NB	--	--
1,1-Dichloroethene	0.014	0.005	0.000025	0.0018	0.0018	0.0011	0.0000033	NB	NB	--	--
1,2,4-Trichlorobenzene	0.16	1.2	0.00028	0.42	0.42	0.25	0.00076	NB	NB	--	--
1,2-Dichlorobenzene	0.16	1.2	0.00029	0.42	0.42	0.25	0.00076	NB	NB	--	--
1,2-Dichloroethane	0.014	0.005	0.000025	0.0018	0.0018	0.0011	0.0000033	17.2	NB	1.9E-07	--
1,2-Dichloropropane	0.014	0.005	0.000025	0.0018	0.0018	0.0011	0.0000033	NB	NB	--	--
1,3-Dichlorobenzene	0.16	1.2	0.00028	0.42	0.42	0.25	0.00076	NB	NB	--	--
1,4-Dichlorobenzene	0.15	1.2	0.00027	0.42	0.42	0.25	0.00076	32.2	NB	2.4E-05	--
2-Butanone	0.048	0.011	0.000088	0.0039	0.004	0.0023	0.0000072	NB	NB	--	--
2-Hexanone	0.015	0.005	0.000028	0.0018	0.0018	0.0011	0.0000033	NB	NB	--	--
4-Methyl-2-pentanone	0.012	0.005	0.000022	0.0018	0.0018	0.0011	0.0000033	NB	NB	--	--
Acetone	0.61	0.15	0.0011	0.056	0.057	0.033	0.0001	NB	NB	--	--
Benzene	0.014	0.005	0.000025	0.0018	0.0018	0.0011	0.0000033	NB	NB	--	--
Bromodichloromethane	0.014	0.005	0.000025	0.0018	0.0018	0.0011	0.0000033	NB	NB	--	--
Bromomethane	0.012	0.005	0.000022	0.0018	0.0018	0.0011	0.0000033	NB	NB	--	--
Carbon disulfide	0.086	0.0056	0.00016	0.002	0.0022	0.0013	0.0000039	NB	NB	--	--
Carbon tetrachloride	0.014	0.005	0.000025	0.0018	0.0018	0.0011	0.0000033	NB	NB	--	--
Chlorobenzene	0.013	0.005	0.000024	0.0018	0.0018	0.0011	0.0000033	NB	NB	--	--
Chloroethane	0.014	0.005	0.000025	0.0018	0.0018	0.0011	0.0000033	NB	NB	--	--
Chloroform	0.009	0.005	0.000016	0.0018	0.0018	0.0011	0.0000033	NB	NB	--	--
Chloromethane	0.013	0.005	0.000024	0.0018	0.0018	0.0011	0.0000033	NB	NB	--	--
cis -1,2-Dichloroethene	0.013	0.005	0.000024	0.0018	0.0018	0.0011	0.0000033	NB	NB	--	--
Methylene chloride	0.058	0.011	0.00011	0.0041	0.0042	0.0024	0.0000076	NB	NB	--	--
Ethylbenzene	0.014	0.005	0.000025	0.0018	0.0018	0.0011	0.0000033	NB	NB	--	--
Styrene	0.014	0.005	0.000025	0.0018	0.0018	0.0011	0.0000033	NB	NB	--	--
Tetrachloroethene	0.014	0.005	0.000024	0.0018	0.0018	0.0011	0.0000033	NB	NB	--	--
Toluene	0.012	0.005	0.000021	0.0018	0.0018	0.0011	0.0000033	NB	NB	--	--
trans -1,3-Dichloropropene	0.014	0.005	0.000025	0.0018	0.0018	0.0011	0.0000033	NB	NB	--	--
Bromoform	0.014	0.005	0.000025	0.0018	0.0018	0.0011	0.0000033	NB	NB	--	--
Trichloroethene	0.014	0.005	0.000024	0.0018	0.0018	0.0011	0.0000033	NB	NB	--	--
Vinyl chloride	0.014	0.005	0.000025	0.0018	0.0018	0.0011	0.0000033	NB	NB	--	--
SVOCs											
2,4,5-Trichlorophenol	0.95	0.009	0.0017	0.0033	0.005	0.0029	0.0000089	NB	NB	--	--
2,4,6-Trichlorophenol	0.38	0.047	0.00068	0.017	0.018	0.01	0.000032	NB	NB	--	--
2,4-Dichlorophenol	0.38	0.065	0.00068	0.024	0.024	0.014	0.000043	NB	NB	--	--
2,4-Dimethylphenol	0.38	0.07	0.00069	0.025	0.026	0.015	0.000047	NB	NB	--	--
2,4-Dinitrophenol	0.97	0.13	0.0018	0.047	0.049	0.028	0.000088	NB	NB	--	--
2,4-Dinitrotoluene	0.38	0.07	0.00068	0.025	0.026	0.015	0.000047	NB	NB	--	--
2,6-Dinitrotoluene	0.38	0.051	0.00068	0.018	0.019	0.011	0.000034	NB	NB	--	--
2-Chloronaphthalene	0.38	0.032	0.00068	0.012	0.012	0.0071	0.000022	NB	NB	--	--

Table 7-11. (cont.)

Analyte	Concentration: Sediment (mg/kg dw)	Concentration: Fish (mg/kg ww)	Daily Exposure: Sediment (mg/day)	Daily Exposure: Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	Area Use Adjusted Exposure (mg/kg-day)	TRV: NOAEL (mg/kg-day)	TRV: LOAEL (mg/kg-day)	Hazard Quotient: NOAEL Hazard Quotient	Hazard Quotient: LOAEL Hazard Quotient
2-Chlorophenol	0.38	0.06	0.00068	0.022	0.022	0.013	0.00004	NB	NB	--	--
2-Methyl-4,6-dinitrophenol	0.95	0.08	0.0017	0.029	0.031	0.018	0.000055	0.454	NB	0.00012	--
2-Methylnaphthalene	0.37	0.0021	0.00067	0.00076	0.0014	0.00083	0.0000026	NB	NB	--	--
2-Methylphenol	0.38	0.29	0.00068	0.11	0.11	0.061	0.00019	NB	NB	--	--
2-Nitroaniline	0.95	0.14	0.0017	0.051	0.052	0.03	0.000094	NB	NB	--	--
2-Nitrophenol	0.38	0.08	0.00068	0.029	0.03	0.017	0.000053	NB	NB	--	--
3,3'-Dichlorobenzidine	0.38	4.2	0.00068	1.5	1.5	0.88	0.0027	NB	NB	--	--
3-Nitroaniline	0.95	0.048	0.0017	0.017	0.019	0.011	0.000034	NB	NB	--	--
4-Chloro-3-methylphenol	0.38	0.39	0.00068	0.14	0.14	0.082	0.00025	NB	NB	--	--
4-Chloroaniline	0.38	0.032	0.00068	0.012	0.012	0.0071	0.000022	NB	NB	--	--
4-Chlorophenyl-phenyl ether	0.38	0.024	0.00068	0.0087	0.0094	0.0054	0.000017	NB	NB	--	--
4-Methylphenol	0.38	0.03	0.00068	0.011	0.012	0.0067	0.000021	NB	NB	--	--
4-Nitroaniline	0.95	0.14	0.0017	0.051	0.052	0.03	0.000094	NB	NB	--	--
4-Nitrophenol	0.97	0.04	0.0018	0.014	0.016	0.0094	0.000029	NB	NB	--	--
Acenaphthene	0.38	0.0014	0.00068	0.00051	0.0012	0.00069	0.0000021	NB	NB	--	--
Acenaphthylene	0.36	0.0004	0.00065	0.00014	0.00079	0.00046	0.0000014	NB	NB	--	--
Acetophenone	0.28	0.016	0.00051	0.0058	0.0063	0.0037	0.000011	NB	NB	--	--
Anthracene	0.32	0.001	0.00058	0.00036	0.00094	0.00055	0.0000017	NB	NB	--	--
Atrazine	0.28	0.18	0.00051	0.065	0.066	0.038	0.00012	NB	NB	--	--
Benz[a]anthracene	0.26	0.001	0.00048	0.00036	0.00084	0.00049	0.0000015	NB	NB	--	--
Benzaldehyde	0.28	3.9	0.00052	1.4	1.4	0.82	0.0025	NB	NB	--	--
Benzo[a]pyrene	0.25	0.001	0.00046	0.00036	0.00082	0.00048	0.0000015	NB	NB	--	--
Benzo[b]fluoranthene	0.33	0.0009	0.00059	0.00033	0.00092	0.00053	0.0000016	NB	NB	--	--
Benzo[ghi]perylene	0.29	0.0006	0.00052	0.00022	0.00074	0.00043	0.0000013	NB	NB	--	--
Benzo[k]fluoranthene	0.35	0.001	0.00064	0.00036	0.001	0.00058	0.0000018	NB	NB	--	--
Biphenyl	0.28	0.025	0.00051	0.0091	0.0096	0.0055	0.000017	NB	NB	--	--
Bis[2-chloroethoxy]methane	0.38	0.027	0.00068	0.0098	0.01	0.0061	0.000019	NB	NB	--	--
Bis[2-chloroethyl]ether	0.38	0.047	0.00068	0.017	0.018	0.01	0.000032	NB	NB	--	--
Bis[2-chloroisopropyl]ether	0.32	0.06	0.00058	0.022	0.022	0.013	0.00004	NB	NB	--	--
Bis[2-Ethylhexyl]phthalate	3.7	0.1	0.0067	0.036	0.043	0.025	0.000077	1.2	NB	6.4E-05	--
Butylbenzyl phthalate	0.38	0.38	0.00068	0.14	0.14	0.08	0.00025	NB	NB	--	--
Caprolactam	0.29	0.07	0.00053	0.025	0.026	0.015	0.000046	NB	NB	--	--
Carbazole	0.38	0.18	0.00068	0.065	0.066	0.038	0.00012	NB	NB	--	--
Chrysene	0.31	0.001	0.00056	0.00036	0.00093	0.00054	0.0000017	NB	NB	--	--
Dibenz[a,h]anthracene	0.34	0.00021	0.00062	7.6E-05	0.0007	0.00041	0.0000013	NB	NB	--	--
Dibenzofuran	0.38	0.0011	0.00068	0.0004	0.0011	0.00063	0.0000019	NB	NB	--	--
Diethyl phthalate	0.38	0.13	0.00068	0.047	0.048	0.028	0.000086	NB	NB	--	--
Dimethyl phthalate	0.38	0.12	0.00068	0.043	0.044	0.026	0.000079	NB	NB	--	--
Di-*n*-butyl phthalate	0.38	1.4	0.00068	0.51	0.51	0.29	0.00091	NB	NB	--	--
Di-*n*-octyl phthalate	0.37	0.07	0.00067	0.025	0.026	0.015	0.000047	NB	NB	--	--
Fluoranthene	0.37	0.004	0.00068	0.0014	0.0021	0.0012	0.0000038	NB	NB	--	--
Fluorene	0.38	0.0011	0.00068	0.0004	0.0011	0.00063	0.0000019	NB	NB	--	--
Hexachlorobenzene	0.38	0.032	0.00068	0.012	0.012	0.0071	0.000022	NB	NB	--	--
Hexachlorobutadiene	0.38	0.046	0.00068	0.017	0.017	0.01	0.000031	NB	NB	--	--

Table 7-11. (cont.)

Analyte	Concentration		Daily Exposure		Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	Area Use Adjusted Exposure (mg/kg-day)	TRV		Hazard Quotient	
	Sediment (mg/kg dw)	Fish (mg/kg ww)	Sediment (mg/day)	Food (mg/day)				NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Hexachlorocyclopentadiene	0.39	27	0.0007	9.8	9.8	5.7	0.018	NB	NB	--	--
Hexachloroethane	0.38	0.046	0.00068	0.017	0.017	0.01	0.000031	NB	NB	--	--
Indeno[1,2,3-cd]pyrene	0.28	0.0007	0.00051	0.00025	0.00076	0.00044	0.0000014	NB	NB	--	--
Isophorone	0.38	0.025	0.00068	0.0091	0.0097	0.0056	0.000017	NB	NB	--	--
Naphthalene	0.35	0.0028	0.00063	0.001	0.0016	0.00095	0.0000029	NB	NB	--	--
Nitrobenzene	0.38	0.055	0.00068	0.02	0.021	0.012	0.000037	NB	NB	--	--
N-nitroso-di-*n*-propylamine	0.38	0.044	0.00068	0.016	0.017	0.0096	0.00003	NB	NB	--	--
N-nitrosodiphenylamine	0.38	0.055	0.00068	0.02	0.021	0.012	0.000037	NB	NB	--	--
Pentachlorophenol	0.95	0.17	0.0017	0.062	0.063	0.037	0.00011	NB	NB	--	--
Phenanthrene	0.27	0.002	0.00049	0.00072	0.0012	0.0007	0.0000022	NB	NB	--	--
Phenol	0.38	0.15	0.00069	0.054	0.055	0.032	0.000099	NB	NB	--	--
Pyrene	0.55	0.003	0.001	0.0011	0.0021	0.0012	0.0000038	NB	NB	--	--
Total PAHs	5.4	0.02	0.0098	0.0072	0.017	0.0099	0.000031	0.14	1.4	0.00022	2.2E-05
Pesticides/PCBs											
4,4'-DDD	0.009	0.032	0.000016	0.012	0.012	0.0068	0.000021	57.9	NB	3.6E-07	--
4,4'-DDE	0.015	0.039	0.000027	0.014	0.014	0.0081	0.000025	82.9	NB	3.0E-07	--
4,4'-DDT	0.012	0.0056	0.000021	0.002	0.002	0.0012	0.0000037	0.5	NB	7.3E-06	--
Aldrin	0.0034	0.0017	6.2E-06	0.0006	0.00061	0.00035	0.0000011	3.4	NB	3.2E-07	--
α-Chlordane	0.0026	0.0027	4.7E-06	0.00098	0.00098	0.00057	0.0000018	0.282	NB	6.2E-06	--
α-Endosulfan	0.0023	0.0025	4.3E-06	0.0009	0.00091	0.00053	0.0000016	NB	NB	--	--
α-Hexachlorocyclohexane	0.0017	0.0012	3.1E-06	0.00045	0.00045	0.00026	0.00000081	NB	NB	--	--
β-Endosulfan	0.0054	0.0014	9.8E-06	0.00052	0.00053	0.0003	0.00000094	NB	NB	--	--
β-Hexachlorocyclohexane	0.0019	0.0015	3.4E-06	0.00055	0.00056	0.00032	0.000001	NB	NB	--	--
δ-Hexachlorocyclohexane	0.0019	0.0015	3.4E-06	0.00056	0.00056	0.00033	0.000001	NB	NB	--	--
Dieldrin	0.0052	0.0031	9.4E-06	0.0011	0.0011	0.00066	0.000002	0.077	NB	2.6E-05	--
Endosulfan sulfate	0.0038	0.0014	6.8E-06	0.0005	0.00051	0.0003	0.00000092	NB	NB	--	--
Endrin	0.0038	0.0019	6.9E-06	0.00067	0.00068	0.00039	0.0000012	0.01	NB	0.00012	--
Endrin aldehyde	0.0043	0.002	7.7E-06	0.00071	0.00072	0.00042	0.0000013	NB	NB	--	--
Endrin ketone	0.0038	0.0014	6.8E-06	0.00052	0.00053	0.00031	0.00000095	NB	NB	--	--
γ-Chlordane	0.0068	0.0047	0.000012	0.0017	0.0017	0.00099	0.0000031	0.282	NB	1.1E-05	--
γ-Hexachlorocyclohexane	0.002	0.0013	3.6E-06	0.00046	0.00047	0.00027	0.00000084	42.5	NB	2.0E-08	--
Heptachlor	0.0018	0.0015	3.3E-06	0.00054	0.00054	0.00032	0.00000098	9.2	NB	1.1E-07	--
Heptachlor epoxide	0.0021	0.0097	3.8E-06	0.0035	0.0035	0.002	0.0000063	NB	NB	--	--
Methoxychlor	0.035	0.0023	0.000064	0.00083	0.0009	0.00052	0.0000016	10	NB	1.6E-07	--
Toxaphene	0.2	0.056	0.00035	0.02	0.021	0.012	0.000037	NB	NB	--	--
PCBs	0.61	0.43	0.0011	0.16	0.16	0.091	0.00028	0.41	1.8	0.00069	0.00016
Dioxins/Furans											
2,3,7,8-Tetrachlorodibenzo-*p*-dioxin	9.5E-06	4.8E-07	1.7E-08	1.7E-07	1.9E-07	1.1E-07	3.4E-10	0.000014	NB	2.4E-05	--
1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin	8.8E-06	1.3E-07	1.6E-08	4.7E-08	6.3E-08	3.7E-08	1.1E-10	0.000014	NB	8.1E-06	--
1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin	6.2E-06	3E-08	1.1E-08	1.1E-08	2.2E-08	1.3E-08	4E-11	0.000014	NB	2.8E-06	--
1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin	5.6E-05	1.7E-07	1E-07	6.2E-08	1.6E-07	9.4E-08	2.9E-10	0.000014	NB	2.1E-05	--
1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin	2.8E-05	6E-08	5.1E-08	2.2E-08	7.3E-08	4.2E-08	1.3E-10	0.000014	NB	9.3E-06	--
1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin	0.00042	1.2E-06	7.5E-07	4.3E-07	1.2E-06	6.9E-07	2.1E-09	0.000014	NB	1.5E-04	--
Octachlorodibenzo-*p*-dioxin	0.0072	0.000029	0.000013	1.1E-05	0.000023	0.000014	0.000000042	0.000014	NB	3.0E-03	--

Table 7-11. (cont.)

Analyte	Concentration Sediment (mg/kg dw)	Concentration Fish (mg/kg ww)	Daily Exposure Sediment (mg/day)	Daily Exposure Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	Area Use Adjusted Exposure (mg/kg-day)	TRV NOAEL (mg/kg-day)	TRV LOAEL (mg/kg-day)	Hazard Quotient NOAEL Hazard Quotient	Hazard Quotient LOAEL Hazard Quotient
2,3,7,8-Tetrachlorodibenzofuran	3.3E-05	5.1E-07	5.9E-08	1.8E-07	2.4E-07	1.4E-07	4.4E-10	0.000001	NB	4.4E-04	--
1,2,3,7,8-Pentachlorodibenzofuran	9.2E-06	6.3E-08	1.7E-08	2.3E-08	4E-08	2.3E-08	7.1E-11	0.000014	NB	5.1E-06	--
2,3,4,7,8-Pentachlorodibenzofuran	0.00002	3E-07	3.6E-08	1.1E-07	1.4E-07	8.4E-08	2.6E-10	0.000014	NB	1.8E-05	--
1,2,3,4,7,8-Hexachlorodibenzofuran	2.2E-05	1.1E-07	4E-08	4E-08	8E-08	4.6E-08	1.4E-10	0.000014	NB	1.0E-05	--
1,2,3,6,7,8-Hexachlorodibenzofuran	1.1E-05	5.6E-08	2E-08	2E-08	4E-08	2.3E-08	7.3E-11	0.000014	NB	5.2E-06	--
2,3,4,6,7,8-Hexachlorodibenzofuran	1.4E-05	8E-09	2.6E-08	2.9E-09	2.8E-08	1.7E-08	5.1E-11	0.000014	NB	3.7E-06	--
1,2,3,7,8,9-Hexachlorodibenzofuran	4.6E-06	7E-09	8.3E-09	2.5E-09	1.1E-08	6.3E-09	2E-11	0.000014	NB	1.4E-06	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.00013	4.3E-07	2.3E-07	1.6E-07	3.9E-07	2.3E-07	7E-10	0.000014	NB	5.0E-05	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran	1.2E-05	1.1E-08	2.1E-08	4E-09	2.5E-08	1.5E-08	4.5E-11	0.000014	NB	3.2E-06	--
Octachlorodibenzofuran	0.00027	3.1E-07	5E-07	1.1E-07	6.1E-07	3.5E-07	1.1E-09	0.000014	NB	7.8E-05	--
Dioxin/furan TCDD toxicity equivalent	6.8E-05	1.5E-06	1.2E-07	5.4E-07	6.7E-07	3.9E-07	1.2E-09	0.000014	0.00014	8.5E-05	8.5E-06
Inorganic Analytes											
Aluminum	15000	58	27	21	48	28	0.087	120	NB	0.00072	--
Antimony	4.3	0.047	0.0078	0.017	0.025	0.014	0.000045	NB	NB	--	--
Arsenic	200	0.7	0.36	0.25	0.61	0.35	0.0011	10	40	0.00011	2.7E-05
Barium	80	1	0.14	0.37	0.52	0.3	0.00092	21	42	4.4E-05	2.2E-05
Beryllium	1.4	0.014	0.0026	0.0049	0.0075	0.0043	0.000013	NB	NB	--	--
Cadmium	1.2	0.01	0.0021	0.0038	0.0059	0.0034	0.000011	1.5	20	7.1E-06	5.3E-07
Chromium	230	0.26	0.42	0.095	0.52	0.3	0.00093	0.86	4.3	0.0011	0.00022
Cobalt	12	0.062	0.022	0.023	0.045	0.026	0.00008	NB	NB	--	--
Copper	560	3.5	1	1.3	2.3	1.3	0.0041	47	62	8.7E-05	6.6E-05
Iron	46000	81	84	29	110	65	0.2	NB	NB	--	--
Lead	160	0.34	0.29	0.12	0.41	0.24	0.00074	3.9	11	0.00019	6.7E-05
Manganese	240	6.7	0.43	2.4	2.9	1.7	0.0052	980	NB	5.3E-06	--
Mercury	2	0.022	0.0036	0.0078	0.011	0.0066	0.000021	0.032	0.064	0.00064	0.00032
Nickel	33	0.32	0.059	0.12	0.18	0.1	0.00032	77	110	4.1E-06	2.9E-06
Selenium	6.2	0.58	0.011	0.21	0.22	0.13	0.0004	0.4	0.8	0.00100	0.00050
Silver	6	0.045	0.011	0.016	0.027	0.016	0.000049	NB	NB	--	--
Thallium	0.54	0.0028	0.00098	0.0010	0.0020	0.0012	0.0000036	0.24	24	1.5E-05	1.5E-07
Vanadium	110	0.33	0.2	0.12	0.32	0.18	0.00057	11	NB	5.2E-05	--
Zinc	300	43	0.54	16	16	9.5	0.029	70	120	0.00042	0.00024
Calcium	4,000	12,000	7.2	4,300	4,300	2,500	7.7	NB	NB	--	--
Magnesium	5,600	460	10	170	180	100	0.31	NB	NB	--	--
Potassium	2,500	2,600	4.5	950	950	550	1.7	NB	NB	--	--
Sodium	7,900	1,500	14	550	560	330	1.0	NB	NB	--	--

Note:
-- - not applicable
BW - body weight
CoPC - chemical of potential concern
dw - dry weight
LOAEL - lowest observed adverse effect level
NB - no benchmark
NOAEL - no observed adverse effect level
PCB - polychlorinated biphenyl
SVOC - semivolatile organic compound
TCDD - tetrachlorodibenzo-p-dioxin
TRV - toxicity reference value
VOC - volatile organic compound
ww - wet weight

Appendix A

Summary of 2004 Supplemental Field Investigation

Summary of 2004 Supplemental Field Investigation at Horseshoe Road OU-3 (Sayreville, New Jersey)

Introduction

This report provides an overview of the activities that occurred during the sampling event for the supplemental field investigation at Operable Unit 3 (OU-3) of the Horseshoe Road and Atlantic Resources Corporation (ARC) Superfund Sites in Sayreville, New Jersey, from September 27 to October 7, 2004.

The sampling and analysis procedures specified in the field sampling plan (Exponent 2004) served as the basis for all activities. Each sampling activity specified in the plan is described below. All sampling was conducted with Jane Sexton of Exponent serving as chief scientist. Copies of the log book and sample analysis request forms/chain-of-custody records prepared during the field survey are on file at Exponent's Bellevue, Washington, office.

Field Sampling

As proposed in the field sampling plan (Exponent 2004), the supplemental field investigation was conducted to provide information for completion of the baseline ecological risk assessment and feasibility study for the site. The supplemental field investigation provided additional data on the nature and extent of contamination in sediment and biota, as well as sediment toxicity in OU-3, to fill data gaps identified in the work plan. Specifically, the work plan identified the need for the following samples:

- Sediment for analysis of polychlorinated dibenzo-*p*-dioxins and polychlorinated dibenzofurans (PCDD/Fs)
- Sediment for toxicity tests, bioaccumulation tests, and chemical analyses
- Biota (i.e., crabs, plants, terrestrial invertebrates, and small mammals) for chemical analysis.

Sampling stations were located throughout the marsh, in the terrestrial area at the edge of the marsh, in the intertidal area of the Raritan River adjacent to the marsh, and at appropriate marsh and intertidal river reference areas. Several of the stations located deep within the marsh were accessed with a 4×2 Gator™ utility vehicle because of the density of the vegetation (*Phragmites* sp.). Sampling locations were chosen to provide representative coverage of the surrounding area, as well as areas with the highest chemical concentrations known from previous sampling. The following stations were sampled during this investigation:

- 13 marsh sediment stations (including 3 reference stations)
- 15 intertidal river sediment stations (including 5 reference stations)
- 11 intertidal river biota stations (including 1 reference station)
- 6 marsh plant stations (including 1 reference station)
- 2 terrestrial invertebrate stations (including 1 reference station)
- 6 small mammal stations (including 1 reference station)
- 5 marsh sediment stations for PCDD/F analysis (including 1 reference station).

Sample locations are shown in Figure A-1.

Surface Sediment Collection

Surface sediment samples (0–15 cm [0–6 in.]) were collected from the marsh and intertidal river stations using either a stainless-steel spade or a stainless-steel Ekman grab sampler in accordance with standard methods used by U.S. EPA (1986a,b). Procedures for using the Ekman grab sampler are provided in Standard Operating Procedure (SOP) SD-05, *Surface Sediment Sampling Using an Ekman Grab Sampler* (Exponent 2004). When this method was impractical, sediment was collected with a trowel.

Before sampling began at a station, any gross contamination (soil or sediment) was removed from the sampling equipment. The grab sampler and any stainless-steel compositing equipment (i.e., bowls and spoons) were examined for rust. Any stainless-steel equipment that showed signs of rust was discarded. The stainless-steel equipment was scrubbed with Alquinox® or Liquinox®, rinsed with site water, rinsed with nitric acid, rinsed with laboratory-grade distilled/deionized water, rinsed with two solvents (e.g., acetone and hexane), and finally, rinsed with laboratory-grade distilled/deionized water and air-dried. Decontamination procedures are provided in SOP SD-01, *Decontamination of Equipment—Sediments* (Exponent 2004). If there was a significant lapse of time between decontamination of the sampling equipment and collection of the sample, then exposed surfaces of the decontaminated equipment were covered with foil to protect them from possible contamination. Any excess nitric acid was collected in a container and neutralized prior to appropriate disposal. Any excess solvent rinsates were collected in a container, and the small volume collected was allowed to evaporate.

After a sediment sample was retrieved and judged to be acceptable for chemical analyses and toxicity testing (see discussion below), the overlying water was siphoned off, and the upper layer of sediment was collected in accordance with U.S. EPA (1986a,b) guidelines. Stainless-steel spatulas or spoons were used to collect the sediment. A stainless-steel ruler was used to ensure that the sampling criterion for adequate penetration depth was met and that the correct amount (e.g., 15 cm [6 in.]) of sediment had been removed. Sediment touching the sides of the grab sampler was not collected.

At each marsh sampling station, a minimum of three grab samples were collected for chemical analyses and toxicity testing. Approximately 5 to 10 gal of marsh sediment was required for each toxicity test sample. At each intertidal river sampling station, a minimum of three grab samples were collected for PCDD/F analysis. These stations corresponded to the eleven fiddler crab stations where samples were analyzed for PCDD/Fs.

Material collected in the grab sampler was evaluated for acceptability according to whether the following criteria were met:

- The sampler was not overfilled
- Overlying water was present
- The overlying water was not excessively turbid
- The sediment surface was relatively undisturbed
- The minimum sediment penetration depth was attained.

Exponent's field team leader evaluated all samples collected. If a sample failed to meet the above criteria, it was rejected and discarded away from the station. A description of all sediment that met the criteria and that was collected at each station was recorded in the field logbook. Documentation procedures are provided in SOP SD-19, *Field Classification of Sediment* (Exponent 2004).

Surface sediment (top 15 cm [6 in.]) was collected from each grab sample at a station. The sediment samples from multiple grabs at each station were composited in a stainless-steel bowl and covered with aluminum foil until a sufficient volume of sediment was collected for both chemical analysis and toxicity testing. Sediment in the bowl was then mixed using a large stainless-steel spoon to achieve a uniform texture and color before subsamples were taken and transferred to precleaned glass containers with Teflon®-lined lids. Immediately after sample containers were filled, they were placed in a cooler on ice. Samples were stored at 4±2°C.

Fiddler Crab and Estuarine Fishes Collection

Samples of crabs (*Uca minor*) were collected in accordance with SOP BI-10 *Collection of Fiddler Crab for Tissue Analysis* (Exponent 2004; pp. BI-10-1 through BI-10-5). A combination of traps or gloved hands was used to obtain crabs for chemical analysis. Estuarine fishes (*Fundulus* sp.) were collected in the same traps used for crabs.

Fiddler crab sample processing was conducted in accordance with SOP BI-11, *Aquatic Invertebrate Processing Procedures* (Exponent 2004; pp. BI-11-1 through BI-11-3). The following information was recorded as soon as possible after sample collection for each invertebrate collected:

- Species identification
- Total length and weight
- Sex and reproductive state (if possible)
- Presence of grossly visible abnormalities.

After length and weight measurements were made, whole invertebrates were wrapped in foil (dull side against invertebrate shell), and double-bagged in two plastic Ziploc® bags containing a sample identification label.

Processing of estuarine fishes involved identification of *Fundulus* sp. and measurement of the total weight of composite samples from each station. Three replicate composite samples were collected at each station.

Composite samples of crabs were bagged together to represent one sample per station for analytical purposes. Estuarine fishes from each station were also bagged together to represent one sample per station for analytical purposes. Immediately after sample containers were filled, they were placed in a cooler on ice. Samples were stored in the field at 4±2°C. As soon as possible after sample collection, the tissue samples were transferred to dry ice. After the transfer to dry ice, samples were stored and shipped frozen at −20°C.

Plant Collection

A composite sample of the dominant vegetation in the marsh (*Phragmites* sp.) was collected at each sampling location (see SOP BI-13, *Vegetation Sampling* in Exponent [2004]; pp. BI-13-4 through BI-13-5). The *Phragmites* sp. samples were collected near a location where a marsh sediment sample was collected. Collectors ensured that other field personnel had not trampled the *Phragmites* sp. plants sampled. Only the live tuberous roots and the basal portion of the above-ground biomass (approximately first 15 cm [6 in.] of the stem) were collected, because these are the portions of the *Phragmites* sp. typically consumed by the muskrat, which was used in the ecological risk assessment to represent herbivores in the marsh. Approximately half of each sample consisted of root biomass, and half consisted of the basal portion of the stem. The following information was recorded as soon as possible after sample collection:

- Confirmatory species identification
- Total wet weight
- Presence of parasites or anomalies.

Sample collection and handling were performed using powderless latex or Nitrile gloves. *Phragmites* sp. blades were removed from the root materials by cutting the blades with decontaminated scissors. After the weight measurement had been made, *Phragmites* sp. samples were double-bagged in two plastic Ziploc® bags containing a sample identification label. Immediately after the sample bags were filled, they were placed in a cooler on ice. Samples were stored and shipped at 4±2°C.

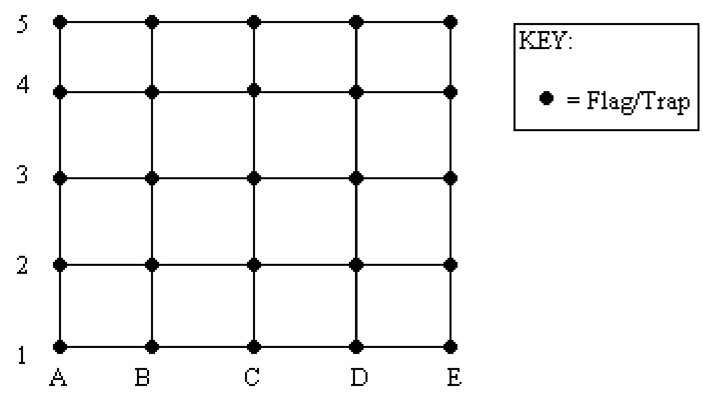
Terrestrial Invertebrate Collection

Terrestrial invertebrates were collected using a combination of pitfall traps, sweep nets, and hand-picking from the vegetation. Terrestrial invertebrates were collected at a station on the marsh at the Site and at a station in the reference area (see SOP BI-14, *Terrestrial Invertebrate Sampling* in Exponent [2004]; pp. BI-14-3 through BI-14-4). Sweep netting was attempted but failed to yield results. Pitfall traps were placed at each station and checked daily. Plastic deli containers were buried into the ground so that the lip was flush with the surface of the soil. Soapy water was then added to break the surface tension to keep any invertebrates from escaping. As a final method of collecting invertebrates, praying mantises were picked off the vegetation with a clean, decontaminated pair of tweezers. The total weight of invertebrates at each station was recorded as soon as possible after each sample collection was collected. Immediately after the sample bags were filled, they were placed in a cooler on ice. The samples were stored in the field at 4±2°C. As soon as possible after sample collection, the tissue samples were transferred to dry ice. After the transfer to dry ice, the samples were stored and shipped frozen at –20°C.

Small Mammal Collection

Small mammals were sampled using techniques described in SOP BI-15, *Small Mammal Trapping Procedures* (Exponent 2004; pp. BI-15-2 through BI-15-6, BI-15-7 [omitting second paragraph] through BI-15-11). The dominant species of small mammal present at the site was collected, depending on availability. Any individuals of an undesirable species were released alive at the location at which they were collected. Five individuals were placed in each composite sample at each station when possible. One composite sample of the small mammal species was collected at each station both at the site and at the reference area.

A 50×50-ft square was measured at each station, and the four corners of the grid were flagged. Then a flag was placed every 5 ft within the square, forming a grid pattern (see diagram below). Letters and numbers were used to mark each flag location (A1, B1, A2, B2, etc). Sherman Live Traps were placed at each flag location and covered with vegetation to protect the small mammals from heat and stress. Rolled whole oats were used as bait. The traps were checked twice a day, once in the morning and once during the late afternoon.



Once a small mammal was trapped, a thoracic compression was performed to euthanize it. Each small mammal contributing to a composite sample was bagged, placed in a common bag for the composite, and processed. The following information was recorded as soon as possible after sample collection for each small mammal collected:

- Date collected
- Method of collection
- Species identification
- Total length
- Total weight
- Visible presence of gross abnormalities
- Age, sex, and reproductive state, if possible.

Small mammals of equivalent size were used for chemical analyses, within the constraints imposed by small mammal availability. If possible, the smallest mammal collected was no less than 80 percent of the size of the largest mammal collected. After length and weight measurements were made, whole small mammals were double-bagged in two plastic Ziploc® bags containing a sample identification label. The whole small mammal was sent to the testing laboratory where the sample was prepared for analysis. All the small mammals were stored in the field at 4±2°C. As soon as possible after sample collection, tissue samples were transferred to dry ice. After the transfer to dry ice, samples were stored and shipped frozen at –20°C.

Chemical Analyses

Columbia Analytical Services, located in Kelso, Washington, completed the chemical analysis of sediment and tissue (i.e., crabs, estuarine fishes, plants, terrestrial invertebrates, small mammals, and worms from the bioaccumulation tests). Sediment and tissue samples were analyzed for the analytes listed in Table A-1.

All tissue samples were homogenized at the laboratory using a blender. If necessary, the plant tissue samples were chopped with a stainless-steel knife prior to homogenization, to reduce the length of fibers. Chemical analyses of worms from the laboratory bioaccumulation tests, field-collected fiddler crab (with shells), estuarine fishes, terrestrial invertebrates, and small mammals were conducted using the whole body. Any unused portions were stored at the laboratory.

Modifications to the Field Sampling Plan

The following modifications were made to the sampling strategy described in the field sampling plan (Exponent 2004):

- Eight additional intertidal river sediment stations were added to the field investigation, in order to have intertidal river sediment chemistry at all stations where aquatic biota were collected (Henry 2004a, pers. comm.). Intertidal river sediments at all stations were collected at low tide (i.e., no overlying water was present) using stainless-steel spoons. These samples were analyzed for metals, semivolatile organic compounds (SVOCs), and pesticides/polychlorinated biphenyls (PCBs). Samples were not analyzed for PCDD/Fs, with the exception of two site locations and one reference location.

- Because of the lateness in the season and the declining ambient temperature, most of the crabs in the intertidal areas of the northeastern United States had gone into winter hibernation prior to the initiation of this field event. Therefore, multiple species of crabs (i.e., blue crab, white-fingered mud crab, and mud fiddler crab) were collected at the site to create a composite sample for a specific station. The tissue mass of crabs available at the site was not sufficient to perform all of the required analyses. Analytes were therefore prioritized as follows: metals, pesticides/PCBs, PCDD/Fs (in crabs for two site and one reference location [if sample mass permitted]), and SVOCs (Henry 2004a, pers. comm.). Any unused tissue was frozen and archived at –20°C for possible future analysis.

- Because of the lack of sufficient crabs to meet sample mass requirements, estuarine fishes (*Fundulus* sp.) were collected and analyzed at each of the 11 intertidal river biota stations (Henry 2004b, pers. comm.). Three replicate samples were collected at each station. These samples were analyzed for metals, SVOCs, and pesticides/PCBs. Samples were not analyzed for PCDD/Fs, with the exception of the two site locations and one reference location where PCDD/Fs were analyzed in sediment.

- Terrestrial invertebrates were collected using a combination of pitfall traps, sweep nets, and hand-picking them off the vegetation. Sweep netting was not performed along specified transects at each station. Terrestrial invertebrates were collected from the terrestrial area along the edge of the marsh. One composite terrestrial invertebrate sample was collected using invertebrates from all of the site stations and one composite terrestrial invertebrate sample was collected from the terrestrial reference area. Praying mantis was added to the species list of terrestrial invertebrates collected at the site and terrestrial reference area.

- Station locations for small mammal trapping were moved from the marsh to the terrestrial area along the edge of the marsh where suitable habitat for small mammals could be found. Stations 11A, 13A, 14A, and 18A were added to the study design, by moving these stations to the edge of the marsh. Small mammals were not collected at Stations 11, 13, and 14. Station 18 was deleted because of its close proximity to Stations 13, 17, and 18A.

- Station 13 was moved approximately 75–100 ft to the west to obtain marsh sediment from an apparent drainage ditch.

- In some cases, sample mass for worms from the bioaccumulation tests was insufficient. Therefore, analysis was prioritized as follows: metals, pesticides/PCBs, and SVOCs.

The first three of these modifications were approved by the U.S. Environmental Protection Agency (EPA) based on short memoranda submitted prior to implementation (Henry 2004a,b, pers. comm.). Others were discussed with and approved by EPA prior to or concurrent with implementation.

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Figure

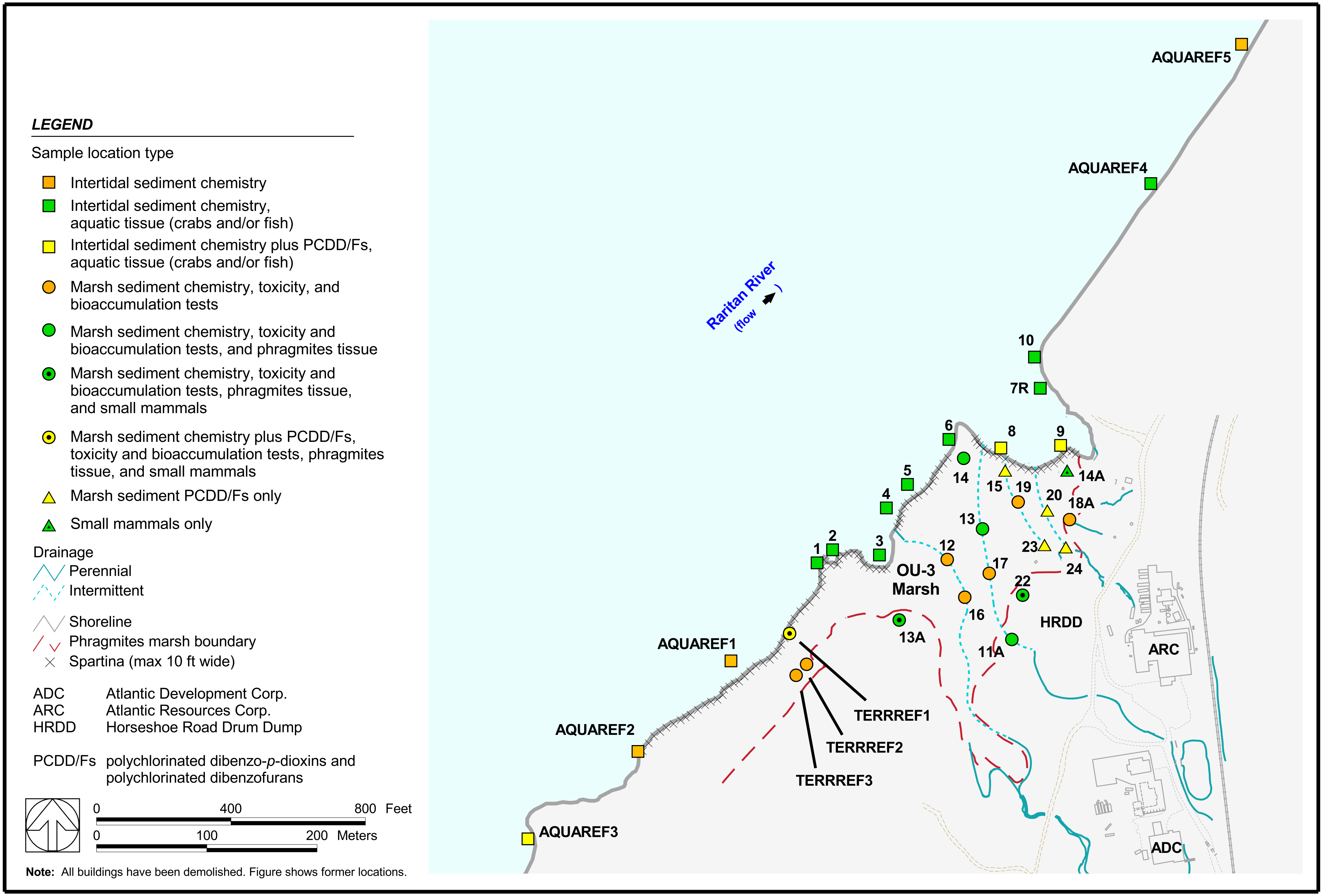

Figure A-1. Stations sampled at Horseshoe Road/ARC OU-3 in September–October 2004

Table

Table A-1. Summary of sampling and analyses for Horseshoe Road/ARC OU-3 (2004)

Task	Number of Sample Locations	Number of Samples per Station	Field Duplicates	Total Number of Samples	Analyses[a]
Sediment Sampling					
Marsh Sediment[b]					
15-cm (0–6 in.) core (3 reference)	17	1	1	18	Full TCL/TAL, pH, grain size, TOC, AVS/SEM, percent moisture, PCDD/Fs (at 4 onsite and 1 reference station)
Intertidal River Sediment[c]					
15-cm (0–6 in.) core (5 reference)	15	1	1	16	Full TCL/TAL, pH, grain size, TOC, AVS/SEM, percent moisture, PCDD/Fs (at 2 onsite and 1 reference station)
Sediment Toxicity and Bioaccumulation Tests					
Marsh Sediment					
15-cm (0–6 in.) grab sample (3 reference)	13	1	0	13	Blackworm 10-day survival and 28-day bioaccumulation (ASTM 2000a; U.S. EPA 2000) earthworm percent weight change 14 days and survival and bioaccumulation 28 days (ASTM 2000b)
Tissue Sampling					
Crab					
Whole-body composites (2 reference)	9	1	0	9	TCL SVOCs, TCL pesticides/PCBs, TAL metals, percent moisture, percent lipids, PCDD/Fs (at 2 onsite and 1 reference station)
Estuarine Fish					
Whole-body composites (2 reference)	12	3[d]	0	35	TCL SVOCs, TCL pesticides/PCBs, TAL metals, percent moisture, percent lipids, PCDD/Fs (at 2 onsite and 1 reference station)
Plant					
Composite root and basal portion (1 reference)	6	1[e]	0	7	TCL SVOCs, TCL pesticides/PCBs, TAL metals, percent moisture
Terrestrial Invertebrates					
Composites (1 reference)	2	1	0	2	TCL pesticides/PCBs, TAL metals, percent moisture, percent lipids
Small Mammals					
Whole-body composites (1 reference)	5	1[f]	0	6	TCL SVOCs, TCL pesticides/PCBs, TAL metals, percent moisture, percent lipids
Blackworm[g]					
Whole-body composites (3 reference)	12	1	0	12	TCL pesticides/PCBs, TAL metals, percent moisture, percent lipids
Earthworm[h]					
Whole-body composites (3 reference	13	1	0	13	TCL SVOCs, TCL pesticides/PCBs, TAL metals, percent moisture, percent lipids

Note: AVS/SEM - acid-volatile sulfide/simultaneously extracted metals
PCDD/Fs - polychlorinated dibenzo-*p*-dioxins and polychlorinated dibenzofuran
PCB - polychlorinated biphenyl
SVOC - semivolatile organic compound
TAL - target analyte list
TCL - target compound list
TCLP - toxicity characteristic leaching procedure
TOC - total organic carbon

[a] Because of sample mass constraints, some biota samples were not analyzed for all analytes. Insufficient mass precluded the analysis of TCL SVOCs in any terrestrial invertebrate or blackworm tissue samples.

[b] Co-located with toxicity testing samples, plus four additional marsh sediment samples analyzed for PCDD/Fs.

Table A-1. (cont.)

[c] Co-located with crab and estuarine fish stations, plus three additional reference intertidal river sediment samples.

[d] Two estuarine fish tissue samples were collected at Station AQUAREF4.

[e] Two plant tissue samples were collected at Station 14.

[f] Two small mammal tissue samples were collected at Station 14A.

[g] Blackworm tissue was obtained from the bioaccumulation tests.

[h] Earthworm tissue was obtained from the bioaccumulation tests.

Appendix B

Data Quality Review for the 2004 Supplemental Field Investigation

Appendix B1

QA/QC Evaluation of Horseshoe Road OU-3 Chemistry Data

Contents

Acronyms and Abbreviations

AVS	acid-volatile sulfide
BERA	baseline ecological risk assessment
CAS	Columbia Analytical Services
CCV	continuing calibration verification
DQI	data quality indicator
EMPC	estimated maximum possible concentration
EPA	U.S. Environmental Protection Agency
GC/MS	gas chromatography/mass spectrometry
HpCDD	heptachlorodibenzo-*p*-dioxin
HxCDD	hexachlorodibenzo-*p*-dioxin
HpCDF	heptachlorodibenzofuran
HxCDF	hexachlorodibenzofuran
ICP-MS	inductively coupled plasma-mass spectrometry
LCS	laboratory control sample
MDL	method detection limit
MRL	method reporting limit
MS/MSD	matrix spike/matrix spike duplicate
OCDD	octachlorodibenzo-*p*-dioxin
OCDF	octachlorodibenzofuran
OU-3	Operable Unit 3
PCB	polychlorinated biphenyl
PCDD/F	polychlorinated dibenzo-*p*-dioxin and polychlorinated dibenzofuran
QA/QC	quality assurance and quality control
QAPP	quality assurance project plan
RPD	relative percent difference
RRF	relative response factor
SDG	sample delivery group
SEM	simultaneously extracted metals
SVOC	semivolatile organic compound
TOC	total organic carbon
VOC	volatile organic compound

QA/QC Evaluation of Horseshoe Road OU-3 Chemistry Data

Introduction

Samples of sediment, fish, crab, small mammal, terrestrial invertebrate, marsh vegetation, and field blanks (i.e., equipment rinsate blanks and trip blanks) were collected in September and October 2004 to support the completion of a baseline ecological risk assessment (BERA) and feasibility study for Operable Unit 3 (OU-3) of the Horseshoe Road and Atlantic Resources Corporation Superfund Sites located in Sayreville, Middlesex County, New Jersey. In addition, sediment was collected to complete terrestrial and aquatic toxicity tests, which included the 14-day earthworm (i.e., *Eisenia fetida*) subacute toxicity test (i.e., survival and growth); the 28-day earthworm (i.e., *Eisenia fetida*) bioaccumulation test; the 10-day blackworm (i.e., *Lumbriculus variegatus*) toxicity test (i.e., survival and growth); and the 28-day blackworm (i.e., *Lumbriculus variegatus*) bioaccumulation test. Two laboratories participated in the organic and inorganic chemical analysis of the samples.

Exponent completed a data quality review, including data validation and data quality assessment. Results of the data quality review for the chemical analyses completed are provided in this report. The data quality review for the chemical analyses was conducted to verify that quality assurance and quality control (QA/QC) procedures were completed and documented as required during sample collection and analysis and that the quality of the data is sufficiently high to support its intended uses. Data that did not meet control limits for quality control measurements were qualified as estimated at the laboratory or during the data quality review. All data that are qualified as estimated (*J*) have an acceptable degree of uncertainty and represent data of good quality and reasonable confidence (U.S. EPA 1989, 1996). These results are acceptable for use in the BERA and feasibility study. Results that were rejected (*R*) during the data quality review are not usable for any purpose.

The work plan for this investigation (Exponent 2004) provides a description of the study and the rationale for the sampling and analysis program. Sampling procedures are provided in the field sampling plan (Exponent 2004, Appendix A). Descriptions of the procedures used for chemical analyses, data validation, and data management are provided in the quality assurance project plan (QAPP) (Exponent 2004, Appendix B) and are summarized below.

The remainder of this data quality review includes a summary of samples collected and chemical analyses completed, descriptions of data validation procedures, and descriptions of QA/QC procedures and data quality for the environmental samples. The results of the data quality review for the sediment toxicity tests and bioaccumulation tests are provided in Appendices B2 and B3, respectively.

Samples and Analyses

Samples collected for the BERA and feasibility study for which chemical analyses were completed included the following:

- A total of 34 sediment samples were collected and analyzed for volatile organic compounds (VOCs), semivolatile organic compound (SVOCs), organochlorine pesticides, polychlorinated biphenyls (PCBs) as Aroclors®, polychlorinated dibenzo-*p*-dioxins and polychlorinated dibenzofurans (PCDD/Fs), metals, cyanide, acid-volatile sulfides (AVS) and simultaneously extracted metals (SEM), total solids, lipids, total organic carbon (TOC), grain size distribution, and pH
- A total of 35 fish samples (whole body composites) were collected and analyzed for SVOCs, organochlorine pesticides, PCBs as Aroclors®, PCDD/Fs, metals, total solids, and lipids
- A total of 9 crab samples (whole body composites) were collected and analyzed for SVOCs, organochlorine pesticides, PCBs as Aroclors®, PCDD/Fs, metals, total solids, and lipids
- A total of 6 mammal samples (whole body composites) were collected and analyzed for SVOCs, organochlorine pesticides, PCBs as Aroclors®, metals, total solids, and lipids
- A total of 2 terrestrial invertebrate samples (whole body composites) were collected and analyzed for organochlorine pesticides, PCBs as Aroclors®, metals, total solids, and lipids
- A total of 7 marsh vegetation samples (i.e., common reed *Phragmites* sp.) were collected and analyzed for SVOCs, organochlorine pesticides, PCBs as Aroclors®, metals, and total solids
- A total of 31 bioaccumulation samples (comprised of 12 blackworm composite samples and 2 control/reference samples, and 13 earthworm composite samples and 4 control/reference samples) were collected and analyzed for SVOCs, organochlorine pesticides, PCBs as Aroclors®, metals, total solids, and lipids
- A total of 3 equipment rinsate blanks were collected and analyzed for SVOCs, organochlorine pesticides, PCBs as Aroclors®, PCDD/Fs, and metals
- A total of 5 trip blanks were collected and analyzed for VOCs only.

A summary of the samples collected, corresponding laboratory sample numbers, laboratory sample delivery groups (SDGs) identifiers, and the analyses completed are summarized in Table B1-1.

All chemical analyses (except of PCDD/Fs) were completed by Columbia Analytical Services, Inc. (CAS) located in Kelso, Washington. The PCDD/F analyses were completed by CAS located in Houston, Texas. The data were submitted in eight SDGs under work order numbers K2407929, K2407936, K2407941, K2408037, K2408294, K2408316, K2409730, and K2409734. Organic and inorganic chemical analyses were completed according to the methods indicated in the QAPP (Exponent 2004 Appendix B), with the following modifications:

- Analyses for selenium in all tissue samples was completed using U.S. Environmental Protection Agency (EPA) SW-846 Method 7742 (borohydride reduction and graphite furnace atomic absorption spectrometry) (U.S. EPA 2005) instead of EPA SW-846 Method 6020 (U.S. EPA 2005) using inductively coupled plasma-mass spectrometry (ICP-MS). Tissue samples were not analyzed by ICP-MS because carbon creates an isobaric interference on the mass spectrometer.

- Analyses for aluminum, copper, manganese, and zinc in all tissue and sediment samples were completed by inductively coupled plasma-atomic emission spectrometry using EPA SW-846 Method 6010B in all sediment and tissue samples, and analyses for barium in the bioaccumulation samples were completed by EPA SW-846 Method 6010B (U.S. EPA 2005), rather than by EPA SW-846 Method 6020 (U.S. EPA 2005). EPA SW-846 Method 6010B was used for these metals because the concentrations in the samples were sufficiently high. Data generated using the two methods are expected to be comparable.

- Analyses for cyanide in sediment samples were completed by automated colorimetric detection using EPA SW-846 Method 9012A rather than using EPA SW-846 Method 9014 (U.S. EPA 2005) using titration and manual spectrophotometric detection. Data generated using the two methods are expected to be comparable.

In addition to these method changes, pH determinations in sediment were added to the analyte list and were completed using EPA Method 9045C (U.S. EPA 2005).

Because of limited sample masses for some of the biota samples, not all planned analyses could be completed. A summary of the samples collected and the analyses completed is provided in Table B1-1.

Data Validation Procedures

Data validation procedures were completed following the validation process specified in applicable EPA national functional guidelines. Specifically, EPA national functional guidelines for inorganic analyses (i.e., metals and cyanide) (U.S. EPA 2002a), for organic analyses (i.e., VOC, SVOCs, organochlorine pesticides, and PCBs) (U.S. EPA 1999), and for PCDD/Fs (U.S. EPA 2002b) were used. Chemical and physical data for which EPA has not prepared national functional guidelines (i.e., grain size distribution, total solids, TOC, percent lipid content, and AVS) were verified and validated following the "evaluation procedures" specified in EPA national functional guidelines (e.g., assessment of holding times, instrument calibration, accuracy, and precision data). For these data, method-specific quality control requirements and laboratory-established control limits, as they are applicable to the analytical methods being used, were used to determine whether data require qualification.

The chemical data discussed herein were subjected to an abbreviated data validation review, as was specified in the QAPP (Exponent 2004, Appendix B) and included evaluation of the results reported for quality control samples (e.g., calibration and method blanks, surrogate recoveries, matrix spike/matrix spike duplicate [MS/MSD] recoveries, and laboratory control sample [LCS] recoveries) with respect to applicable method-specific and applicable laboratory-established control limits. Instrument tuning, initial calibration, and continuing calibration results were also reviewed. Calculations and transcriptions were not checked on a routine basis because the laboratory is responsible for review and verification of analyte identifications, calculations, and transcriptions.

The following items were evaluated during data validation:

- The case narrative discussing analytical problems (if any) and procedures
- Chain-of-custody documentation to verify completeness of data
- Sample preparation logs or laboratory summary result forms to verify analytical holding times
- Applicable results for mass spectrometer tuning, initial instrument calibration, and continuing calibration to assess instrument performance
- Applicable results for method blanks, initial calibration blanks, and continuing calibration blanks, to check for laboratory contamination
- Applicable results for surrogate compounds, LCS, and MS/MSD samples, to assess efficiency of the sample extractions, analytical accuracy in the absence of matrix effects, and analytical accuracy with matrix effects, respectively
- Applicable results for internal standards performance to ensure that instrument sensitivity and response are stable during the analysis of the samples
- Results for serial dilutions to check for matrix interferences that may affect the analyte signal for metals analyzed by ICP methods
- Applicable results for laboratory duplicate samples, MS/MSD, and duplicate LCS (i.e., blank spikes and/or reference material samples) analyses to assess analytical precision
- Applicable results for field quality control samples (field blanks and field replicate and/or field duplicate samples).

Spot checks of calculations were completed for each type of analysis. In addition, all of the data reported in the laboratory data packages was checked against the electronic data imported or hand-entered into the database, and all discrepancies were resolved.

Data qualifiers were assigned to results during data validation when specific measurement quality objectives and/or data quality indicators (DQIs) (e.g., control limits for bias and precision) were not achieved. Data qualifiers were added (when needed) according to procedures described in the EPA Contract Laboratory Program national functional guidelines for data review (U.S. EPA 1999, 2002a,b), as applicable. Modifications were made as were appropriate to accommodate method-specific quality control requirements not addressed by functional guidelines. All data qualified as estimated (*J*) have an acceptable degree of uncertainty and represent data of good quality and reasonable confidence (U.S. EPA 1989, 1996). Results that are rejected (*R*) are not usable for any purpose.

Overall Data Quality and Usability

The quality of the data was generally very good. Data qualifiers were applied to individual results when control limits were exceeded for one or more quality control samples or procedures. A total of 15,518 results were reported for the analyses completed, excluding laboratory quality control results. Of these results, 2,437 (16 percent) were qualified as estimated (*J*), 337 (2 percent) were restated as undetected (*U*), and 30 (0.2 percent) were rejected (*R*) during data validation. The reported data are presented in Appendix C.

One result reported for cyanide and 29 results reported for 2-butanone in sediment samples were rejected (*R*) and are not usable for any purpose. All other data, qualified and unqualified, are of sufficiently high quality for use in the BERA and feasibility study. Quality control results are described below for sediment, fish, crab, mammal, insect, vegetation, earthworm and blackworm bioaccumulation tests, and field blank samples.

Data Quality Review Summary

Chemical data for the analyses completed were evaluated in terms of completeness, holding times, instrument performance, laboratory and field blanks, accuracy, precision, and analyte identification and quantification. The results for the quality control procedures used during sample analyses are discussed below.

Completeness

Completeness was greater than 99 percent. The laboratory provided results for all requested analyses. A total of 15,518 results were reported for the analyses completed, excluding laboratory quality control results. Of these results, 2,438 (16 percent) were qualified as estimated (*J*), 337 (2 percent) were restated as undetected (*U*), and 30 (0.2 percent) were rejected (*R*) during data validation. One result reported for cyanide and 29 results reported for 2-butanone (i.e., methyl ethyl ketone) in sediment samples were rejected (*R*).

A summary of data reported and qualified by matrix is as follows:

- For the sediment sample analyses, 6,333 results were reported, excluding field blanks and laboratory quality control results. Of these results, 1,013 (16 percent) were qualified as estimated (*J*), 125 (2 percent) were restated as undetected (*U*), and 30 (0.5 percent) were rejected (*R*).

- For the fish tissue sample analyses, 4,355 results were reported, excluding field blanks and laboratory quality control results. Of these results, 796 (18 percent) were qualified as estimated (*J*) and 90 (2 percent) were restated as undetected (*U*). No results required rejection (*R*).

- For the crab sample analyses, 631 results were reported, excluding field blanks and laboratory quality control results. Of these results, 96 (15 percent) were qualified as estimated (*J*) and 36 (6 percent) were restated as undetected (*U*). No results required rejection (*R*).

- For the small mammal sample analyses, 578 results were reported, excluding field blanks and laboratory quality control results. Of these results, 58 (10 percent) were qualified as estimated (*J*) and 32 (6 percent) were restated as undetected (*U*).

- For the terrestrial invertebrate sample analyses, 106 results were reported, excluding field blanks and laboratory quality control results. Of these results, 11 (10 percent) were qualified as estimated (*J*). No results required restatement as undetected (*U*) or rejection (*R*).

- For the marsh vegetation sample analyses, 819 results were reported, excluding field blanks and laboratory quality control results. Of these results, 174 (21 percent) were qualified as estimated (*J*) and 34 (4 percent) were restated as undetected (*U*). No results required rejection (*R*).

- For the bioaccumulation sample analyses, 2,028 results were reported, excluding field blanks and laboratory quality control results. Of these results, 252 (12 percent) were qualified as estimated (*J*) and 13 (0.6 percent) were restated as undetected (*U*). No results required rejection (*R*).

- For the equipment rinsate blank sample analyses, 423 results were reported, excluding laboratory quality control results. Of these results, 20 (5 percent) were qualified as estimated (*J*) and 7 (2 percent) were restated as undetected (*U*). No results required rejection (*R*).

- For the trip blank sample analyses, 245 results were reported, excluding laboratory quality control results. Of these results, 18 (7 percent) were qualified as estimated (*J*). No results required restatement as undetected (*U*) or rejection (*R*).

Holding Times and Sample Preservation

The analytical holding time constraints and sample preservation requirements specified in Table B-4 of the QAPP (Exponent 2004, Appendix B) were met.

Instrument Performance

The performance of the analytical instruments was acceptable. No changes in instrument performance that would have resulted in the degradation of data quality were indicated during any analysis sequence.

Mass Spectrometer Tuning

Mass spectrometer tuning checks were required for the analysis of VOCs by gas chromatography/mass spectrometry (GC/MS), SVOCs by GC/MS, PCDD/Fs by high resolution gas chromatography/high resolution mass spectrometry, and metals by ICP-MS. Mass spectrometer tuning checks were completed as required and the results met the applicable method-specific control limits.

Initial and Continuing Calibration

Initial calibration, initial calibration verification, and continuing calibration were completed as required for all analyses. Initial calibrations and continuing calibrations were acceptable in all cases, except as noted below. The purpose of the initial calibration is to establish the linear range of the instrument using five calibration standards. The initial calibration data are assessed to ensure that the instrument is capable of acceptable performance in the beginning of the analytical run, and of producing a linear calibration curve. The purpose of continuing calibrations is to ensure that acceptable qualitative and quantitative data are generated during analysis.

For the analyses of VOCs and SVOCs using GC/MS, the relative standard deviation for some target analytes in the initial calibration was above the control limit of 30 percent. Qualification of associated sample results was not required because the results for the alternative assessment method-allowed evaluation procedure (i.e., completing least-squares linear regression or a quadratic fit) were acceptable (U.S. EPA 2005). For the analysis of VOCs in sediment samples using one GC/MS (i.e., MS05), the minimum relative response factors (RRFs) control limit of 0.050 was not met for 2-butanone (RRF of 0.0247) in the associated initial calibration and was not met for 2-butanone in second source verification standard (RRF of 0.040). Because the minimum RRF criterion was not met, the result reported as detected for 2-butanone in one sample was qualified as estimated (*J*) and the results reported as undetected in the associated 29 samples were rejected (*R*). For the analysis of VOCs using another GC/MS (i.e., MS13), used only for the reporting of acetone in Sample SD0010, the minimum RRF control limit of 0.050 was not met for acetone (RRF of 0.0440) and 2-butanone (RRF of 0.0159) and in the second source verification standard (RRFs of 0.0.0410 and 0.0168, respectively). Because the minimum RRF criterion was not met, the result reported as detected for acetone in Sample SD0010 was qualified as estimated (*J*).

For analyses of VOCs and SVOCs using GC/MS, the control limit of ±25 percent difference percent of the RRFs as compared to the average RRF from the multiple-point initial calibration was not met for some target analytes in selected continuing calibration verification (CCV) standards. Qualification of associated sample results was not required because the overall average of the percent differences, which is an alternative method-allowed evaluation procedure, was acceptable (U.S. EPA 2005). For the analysis of VOCs in sediment samples, the minimum RRF control limit of 0.050 was not met for acetone (RRF of 0.044) and 2-butanone (RRF of 0.0159) in one CCV (used only to obtain the result reported as detected for acetone in Sample SD0010). Because the minimum RRF criterion was not met, the result reported for acetone was qualified as estimated (*J*). In addition, the minimum RRF control limit of 0.050 was not met for 2-butanone in all CCVs. No additional action was required because all results reported for this VOC were previously qualified as a result of initial calibration exceedances.

For the analyses of organochlorine pesticides and PCBs using gas chromatography/electron capture detection, the control limit of ±15 percent difference (or drift) of the calibration factor for a CCV standard as compared to the average calibration factor from the multiple-point initial calibration was not met in selected CCVs. Qualification of the data was not required because the exceedances were reported for the chromatographic column used for quantification or the column used to verify qualitative verification, but not on both columns; the exceedances were the result of greater instrument sensitivity and the affected target analytes were not detected in the associated samples or the exceedances were only slightly outside the control limit of ±15 percent difference (or drift).

Laboratory and Field Blanks

Laboratory blanks for this project included method blanks for all analyses and additional calibration blanks for metals, AVS, SEM, TOC, and cyanide analyses. Field blanks included three equipment rinse blanks and five trip blanks (VOC analyses only). Method blanks were analyzed to check for the existence and magnitude of contamination that may have resulted during sample preparation and analysis. Initial and continuing calibration blank analyses were analyzed to check for the existence and magnitude of contamination that may have resulted during sample analysis. The equipment rinse blanks were collected to determine the effectiveness of equipment decontamination procedures in the field. Trip blanks were collected to monitor for cross-contamination of samples during shipment.

A total of 337 (2 percent of the data set) were restated as undetected (*U*) because target analytes were detected at low levels in several method blank and included the following:

- For the sediment sample analyses, 125 results (2 percent) of the 6,333 total sample results reported were restated as undetected (*U*). A total of 24 antimony, 1 cadmium, 19 nickel, 30 thallium, 28 methylene chloride, 6 acetone, 13 phenol, and 4 bis(2-ethylhexyl)phthalate results were affected.

- For the fish tissue sample analyses, 90 results (2 percent) of the 4,355 total sample results reported were restated as undetected (*U*). A total of five 1,2,3,4,6,7,8-heptachlorodibenzo-*p*-dioxin (HpCDD), two octachlorodibenzo-*p*-dioxin (OCDD), three 1,2,3,4,7,8,9-heptachlorodibenzofuran (HpCDF), nine octachlorodibenzofuran (OCDF), nine methoxychlor, one 4-chloro-3-methylphenol, one pentachlorophenol, 35 naphthalene, 15 dimethyl phthalate, nine di-*n*-butyl phthalate, and one butylbenzyl phthalate results were affected. Seven results reported as detected for methoxychlor were qualified as estimated (*J*) because method blank contamination was suspected. In addition, two results reported for di-*n*-butyl phthalate were qualified as estimated because the results are considered as biased high, because of method blank contamination.

- For the crab sample analyses, 36 results (6 percent) of the 631 total sample results reported were restated as undetected (*U*). Two 1,2,3,7,8,9-hexachlorodibenzo-*p*-dioxin (HxCDD), one 1,2,3,4,6,7,8-HpCDD, three 1,2,3,4,7,8-hexachlorodibenzofuran, (HxCDF) three 1,2,3,6,7,8-HxCDF, two 2,3,4,6,7,8-HxCDF, three 1,2,3,4,6,7,8-HpCDF, three 1,2,3,4,7,8,9-HpCDF, three OCDF, three dibenzofuran, two fluorene, three naphthalene, one anthracene, one acenaphthylene, three phenanthrene, two di-*n*-butyl phthalate, and one bis(2-ethylhexyl)phthalate results were affected.

- For the small mammal sample analyses, 32 results (6 percent) of the 578 total sample results reported were restated as undetected (*U*). Four dibenzofuran, two 4-chloro-3-methylphenol, three pyrene, four phenanthrene, four acenaphthylene, four naphthalene, three anthracene, two fluorene, four 2-methylnaphthalene, one di-*n*-butyl phthalate, and one bis(2-ehylhexyl) phthalate results were affected.

- For the marsh vegetation sample analyses, 34 results (4 percent) of the 819 total sample results reported were restated as undetected (*U*). A total of one methoxychlor, three dibenzofuran, three 4-Chloro-3-methylphenol, one 4-nitrophenol, three pentachlorophenol, seven naphthalene, one fluorene, seven 2-methylnaphthalene, seven di-*n*-butyl phthalate, and one bis(2-ethylhexyl)phthalate results were affected.

- For the bioaccumulation sample analyses, 13 results (0.6 percent) of the 2,028 total sample results reported were restated as undetected (*U*). One vanadium, three methoxychlor, two fluoranthene, and seven di-*n*-butyl phthalate results were affected.

- For the equipment rinsate blank sample analyses, seven results (2 percent) of the 423 total sample results reported were restated as undetected (*U*). A total of one magnesium, three 4,4'-DDD, and three OCDD results were affected.

Results were restated as undetected (*U*) when the analyte was present in the sample at a concentration below 5 times the concentration in the method blank (U.S. EPA 1999, 2002a,b). Results for common laboratory contaminants (e.g., methylene chloride, acetone, and phthalate esters) were restated as undetected (*U*) when the analyte was present in the sample at a concentration below 10 times the concentration in the method blank (U.S. EPA 1999, 2002a,b). If the concentration in a sample analyzed with a method blank that had detectable levels of target analytes and that concentration was greater than 5 times (or 10 times for common laboratory contaminants) the concentration in the blank, no data required qualification.

Method Blanks

A method blank was prepared and analyzed with each sample batch and for every analysis, as required. Low levels of metals (i.e., antimony, calcium, magnesium, manganese, nickel, silver, thallium, and zinc), methoxychlor, VOCs (i.e., bromomethane and methylene chloride), SVOCs (i.e., bis(2-ethylhexyl)phthalate and phenol) and PCDD/F (i.e., , 1,2,3,7,8,9-HxCDD, 1,2,3,4,6,7,8-HpCDD, OCDD, 1,2,3,6,7,8-HxCDF, 1,2,3,4,7,8-HxCDF, 2,3,4,6,7,8-HxCDF 1,2,3,4,7,8,9-HpCDF, 2,3,4,6,7,8-HpCDD, and OCDF) were detected that resulted in the qualification of selected data, as described above.

Calibration Blanks

Initial and continuing calibration blanks are required for metals, AVS, SEM, TOC, and cyanide analyses. Initial and continuing calibration blanks were analyzed at the required frequency. Low levels of metals (i.e., arsenic, antimony, beryllium, cadmium, cobalt, nickel, selenium, silver, and thallium) were detected in calibration blanks. No sample data required qualification based on these detections.

Field Blanks

Three equipment rinsate blanks (one associated with the marsh sediment samples, one associated with the intertidal sediment samples, and one associated with the marsh vegetation samples) were collected to assess whether contaminants may have been introduced during sample collection. Low levels of metals (i.e., aluminum, antimony, barium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, silver, vanadium, and zinc), 4,4′-DDD, phthalate esters (i.e., diethyl phthalate and bis[2-ethylhexyl]phthalate), and OCDD were detected in the equipment rinsate blanks. Several of these results were restated as undetected (*U*) because the analytes were detected at a higher concentration in the associated method blanks than in the samples.

In addition to the equipment blank, five trip blanks were collected and analyzed for VOCs to monitor for potential cross contamination during sample shipment and storage. Low levels of selected VOCs (i.e., acetone, bromomethane, and toluene) were detected in the trip blanks, but no sample data required qualification.

Accuracy

The accuracy (i.e., bias) of the analytical results is reflected by recoveries of internal standards, surrogate compounds LCSs, matrix spikes, and by serial dilution of samples for metals analyses. Results for these quality control procedures are described below.

Internal Standards

Internal standards are added to all samples analyzed for VOCs, SVOCs, and PCDD/Fs using GC/MS and for selected metals using ICP-MS to assess if instrument sensitivity and response is stable during the analytical sequence. Criteria for retention time and area count were generally met for all internal standards. In some instances, the area count for an internal standard did not meet the method-specific criteria for a quality control sample analysis. This type of exceedance did not require qualification of individual sample results.

Surrogate Compounds

Surrogate compounds are used to monitor the efficiency of sample extraction and analysis procedures on a sample-specific basis. They are added to all field and quality control samples prior to extraction. Surrogate recoveries met applicable control limits, with the exceptions noted below. For the analysis of SVOCs, data did not require qualification if the recovery of one surrogate compound for either the acid and/or base/neutral fraction was outside the applicable control limit (U.S. EPA 1999). A total of 198 results (1 percent of the data set) were qualified as estimated (*J*) because surrogate compound recoveries were outside applicable control limits. The affected data are described below.

- For the analysis of SVOCs in sediment samples, 156 results were qualified as estimated (*J*). Specifically, results reported as either detected or undetected for 52 base/neutral target compounds in three samples were qualified because the recoveries for two of the three or all three base/neutral surrogate compounds were below the lower laboratory-established control limit.

- For the analysis of PCDD/Fs in sediment samples, the results reported for OCDD and OCDF in two samples were qualified as estimated (*J*) because the recovery of the ^{13C}OCDD labeled compound was below the lower control limit.

- For the analysis of SVOCs in fish tissue samples, 17 results were qualified as estimated (*J*). Specifically, results reported as detected in one sample using GC/MS operated in the selected ion monitoring mode for polycyclic aromatic hydrocarbons were qualified because the recoveries for two of the three base/neutral surrogate compounds were below the lower laboratory-established control limit.

- For the analysis of organochlorine pesticides in mammal tissue samples, 21 results were qualified as estimated (*J*). Specifically, all 21 target compound results were qualified because the recovery for the surrogate compound decachlorobiphenyl was below the lower laboratory-established control limit and the recovery for the surrogate compound tetrachloro-*meta*-xylene was low, but was above the lower laboratory-established control limit of 10 percent.

Laboratory Control Samples

LCSs (i.e., blanks spikes and/or certified reference materials) provide a control for the entire analytical system, including sample preparation as well as instrumental analysis. An LCS must be included with every sample batch for all analyses except grain size distribution, pH, and total solids. LCSs were analyzed as required in all cases. LCS recoveries met applicable control limits, with the exceptions noted below; a total of 286 results (2 percent of the data set) were qualified as estimated (*J*).

For the analysis of SVOCs in sediment samples, 210 results were qualified as estimated (*J*) for LCS recovery problems. Specifically, all 30 results reported for acetophenone, atrazine, benzaldehyde, biphenyl, caprolactam, 2,4-dimethylphenol, and 1,2,4,5-trichlorobenzene were qualified because these compounds (with the exception of 2,4-dimethylphenol) were inadvertently not added to the LCS spiking mixture. The LCS recoveries for 2,4-dimethyl-phenol were very low or were below the lower laboratory-established control limit. In addition, these SVOCs were not used in the MS/MSD analysis, so no assessment of accuracy could be completed for these target analytes.

All results reported for benzaldehyde in 35 fish tissue samples, three crab tissue samples, four mammal tissue samples, seven marsh vegetation samples, and seven bioaccumulation samples were qualified as estimated (*J*) because the recovery in the LCSs were below the lower laboratory-established control limit. In addition, this SVOC was not used in the MS/MSD analysis, so no assessment of accuracy could be completed for these target analytes.

For the analysis of SVOCs in the equipment rinsate blanks samples, 210 results were qualified as estimated (*J*) for LCS recovery problems. Specifically, all 30 results reported for acetophenone, atrazine, benzaldehyde, biphenyl, caprolactam, 2,4-dimethylphenol, and 1,2,4,5-trichlorobenzene were qualified because these compounds (with the exception of 2,4-dimethyl-phenol) were inadvertently not added to the LCS spiking mixture. The LCS recoveries for 2,4-dimethylphenol were very low or were below the lower laboratory-established control limit. In addition, these SVOCs were not used in the MS/MSD analysis, so assessment of accuracy could not be completed for these target analytes.

For the analysis of VOCs on the trip blanks, the five results reported for methyl *tert*-butyl ether were qualified as estimated (*J*) because the LCS recoveries were below the lower laboratory-established control limit. Because MS/MSD analyses are not completed on trip blanks, an assessment of accuracy could not be completed for this target analyte.

In a few instances, LCS and/or a duplicate LCS recovery was outside the applicable control limit. No action was taken because either the recovery exceedance was not systematic (e.g., both the LCS and duplicate LCS were not affected or because the recoveries were above the upper control limit and the affected target analyte was not detected in the associated samples). For the analysis of a standard reference material sample for metals associated with the bioaccumulation samples, the recovery for aluminum was above the upper control limit. No action was taken because the concentration of aluminum in the standard reference material is two times lower than the CAS detection limit, and is below the sensitivity of the instrument to obtain a reliable analytical result.

Matrix Spike Samples

Matrix spikes are added to field samples to determine the analytical accuracy for samples from the study site. Matrix spike samples are required at a frequency of one per batch (20 or fewer samples) for all applicable analyses. Matrix spikes are not required for the analysis of pH, grain size distribution, and total solids. Matrix spike analyses were completed at the required frequency. Matrix spike recoveries met applicable control limits, with the exceptions noted below; a total of 83 results (0.5 percent of the data set) were qualified as estimated (*J*).

For the analysis of sediment samples, matrix spike recoveries resulted in the qualification as estimated (*J*) for all 30 antimony results and rejected (*R*) for one cyanide result. These antimony results were qualified because the matrix spike recoveries were 29 percent and 52 percent, and were below the lower control limit of 75 percent. The cyanide result was rejected because the matrix spike recovery of 23 percent was below the lower laboratory-established control limit of 75 percent. The laboratory noted that this low matrix spike recovery for cyanide was likely due to matrix interferences; therefore, only the result reported for the sample used to complete the matrix spike was rejected (*R*).

For the analysis of fish tissue samples, a matrix spike recovery resulted in the qualification as estimated (*J*) for 15 aluminum results reported as detected. These aluminum results were qualified because the matrix spike recovery of 136 percent was above the upper control limit of 125 percent.

For the analysis of crab tissue, mammal, and terrestrial invertebrate samples, a matrix spike recovery resulted in the qualification as estimated (*J*) for nine zinc results in crab tissue samples, six zinc results in mammal tissue samples, and two zinc results in terrestrial invertebrate tissue samples reported as detected. These zinc results were qualified because the matrix spike recovery (analyzed as a batch quality control sample) of 178 percent was above the upper control limit of 125 percent.

For the analysis of marsh vegetation samples, matrix spike recoveries resulted in the qualification as estimated (*J*) for seven aluminum, seven copper, and seven lead results reported as either detected or undetected. These results were qualified because matrix spike recoveries of 23 percent for aluminum, 34 percent for copper, and 148 percent for lead were either below the control limit of 75 percent or above the upper control limit of 125 percent.

Matrix spike results are not meaningful when the native concentration of an analyte in the sample is greater than approximately 5 times the concentration of the added spike because the variability (i.e., precision) of the analysis may bias the matrix spike recovery. In addition, if severe matrix interferences are indicated, MS/MSD results are not meaningful. In these cases, the accuracy of the analysis was established based on results for other quality control procedures for accuracy, such as surrogate compounds and LCSs. Organic compound data are not qualified solely based on the results of MS/MSD recovery exceedances (U.S. EPA 1999).

Serial Dilution for Metals by ICP

Serial dilution of sample solutions serves to check for matrix interferences that may affect the analyte signal for metals analyzed by ICP methods. The control limit is 10 percent difference between the undiluted sample and the diluted sample, after adjustment for the dilution. All serial dilution results met the 10 percent difference control limit, with the exceptions noted below; a total of 162 results (1 percent of the data set) were qualified as estimated (*J*).

- For the analysis of sediment samples, the 10 percent difference control limit was not met for beryllium, cobalt, nickel, and thallium. A total of 20 beryllium, 30 cobalt, and 30 nickel results were qualified as estimated (*J*) in the associated samples. Results reported for thallium did not require additional qualification because they were restated as undetected (*U*) as a result of blank contamination.

- For the analysis of the crab tissue and mammal tissue samples, the 10 percent difference control limit was not met for antimony, nickel, and vanadium. A total of nine arsenic results for crab tissue and six arsenic results for mammal tissue samples were qualified as estimated (*J*) in the associated samples.

- For the analysis of terrestrial invertebrate samples, the 10 percent difference control limit was not met for arsenic and vanadium. The two results reported for these metals were qualified as estimated (*J*) in the associated samples.

- For the analysis of the marsh vegetation samples, the 10 percent difference control limit was not met for antimony, nickel, and vanadium. A total of seven antimony, seven nickel, and seven vanadium results reported were qualified as estimated (*J*) in the associated samples.

- For the analysis of the bioaccumulation samples, the 10 percent difference control limit was not met for lead, manganese, and nickel. The 14 results reported for these metals were qualified as estimated (*J*) in the associated samples.

The serial dilution percent difference exceedances were small in all cases and do not indicate a serious or systematic problem with the analyses completed. In addition, the exceedances of serial dilutions that resulted in qualification of selected sample data were based on the percent differences reported in the sample digestate and were not normalized to a solid concentration. This was deemed a more conservative approach.

Precision

Field duplicate samples were collected in the field and duplicate analyses were performed at the laboratory to evaluate the precision of the data. MSDs and/or duplicate LCSs were prepared at the laboratory to monitor the precision of the analyses. Laboratory duplicates (i.e., unspiked sample duplicates) were used for metals and conventional analyses. MSD, duplicate LCS, and laboratory duplicate samples were analyzed with every sample batch (20 or fewer samples), as required, for all analytes. Control limit exceedances are described below. Data that were qualified for exceeded duplicate results may be less precise than unqualified data for the same analysis. No true bias can be assigned on the basis of duplicate results because of such factors as insufficient sample homogeneity and localized hot spots of contamination that may not be representative of site-wide conditions.

Laboratory Duplicates, Matrix Spike Duplicates, and Duplicate LCSs

Laboratory duplicate, MS/MSD, or duplicate LCS analyses were completed at the required frequency when sufficient sample volume was available. Control limits that were exceeded and resulted in the qualification of sample data (metals and grain size distribution only) are described below; a total of 97 results (0.6 percent of the data set) were qualified as estimated (*J*).

- For the analysis of metals in sediment samples, the relative percent difference (RPD) control limit was not met for aluminum (RPD of 31) and antimony (RPDs of 34 and 31). A total of 10 results reported for aluminum and 30 results for antimony were qualified as estimated (*J*).

- For the analysis of metals in marsh vegetation samples, the RPD control limit was not met for aluminum (RPD of 46), arsenic (RPD of 76), barium (RPD of 78), cadmium (RPD of 50), cobalt (RPD of 70), lead (RPD of 78), mercury (RPD of 45), and nickel (RPD of 70). The seven results reported for these metals were qualified as estimated (*J*).

- For the analysis of grain size distribution in sediment samples, an RPD of 58 was calculated for the medium gravel fraction (Phi class –3.00 to –2.00). This exceedance appears to be sample-specific; therefore, the result reported for the affected sample (i.e., SD0012) was qualified as estimated (*J*).

In some instances, the RPDs between the recoveries of the MS and MSD were outside the specified control limit for organic compound analyses. Qualification of the affected data is not required for this reason (U.S. EPA 1999).

Field Duplicate Samples

Field duplicate samples were collected at a frequency of approximately 5 percent of field samples. Only field duplicate results for sediment samples were evaluated. The sediment field duplicates consisted of Samples SD0010 and SD0011, and SD0017 and SD0018. The RPD between the split sample results generally met the project ±50 percent DQI for precision specified in the QAPP (Exponent 2004, Appendix B). Data that were qualified because the ±50 percent control limit was not met are described below.

Replicate samples collected within a station location for tissue matrices were not used to qualify data because the presence of target analytes within these types of samples is dependent on many variable conditions (e.g., type of matrix, lipid content, range of species within the area). The replicate tissue data provide information regarding variability in analyte concentration of tissue type in the area from which they were collected

A total of 54 sediment results (0.3 percent of the data set) were qualified as estimated (*J*). Only the results reported for the sample and its corresponding field duplicate were qualified because the exceedances are likely sample-specific and cannot be interpreted as indicative of variability of the entire data set. Data were qualified for the following reasons:

- For the analysis of grain size distribution on Samples SD0010 and SD0011, the results reported for Phi class size –3.00 to –2.00 and –1.00 to 0.00 were qualified as estimated (*J*) because RPDs of 69 percent and 52 percent, respectively, were calculated.

- For the analysis of SVOCs on Samples SD0010 and SD0011, the results reported for 2,4,5-trichlorophenol and 4-chloroaniline were qualified as estimated (*J*) because these analytes were not detected (SD0010), but were reported as detected in Sample SD0011. The qualification of these data is considered as conservative and does not indicate imprecision of the entire set.

- For the analysis of SVOCs in Samples SD0017 and SD0018, the results reported for 2-methylnaphthalene, naphthalene, and bis(2-ethylhexyl) phthalate were qualified as estimated (*J*) because RPDs of 160 percent, 60 percent, and 130 percent, respectively, were calculated. In addition, the results reported for benzaldehyde and nitrobenzene were qualified as estimated (*J*) because these analytes were not detected in one or the other sample, but were reported as detected in one of the two samples. The qualification of these data is considered as conservative and does not indicate imprecision of the entire set.

- For the analysis of VOCs in Samples SD0010 and SD0011, the results reported for 1,3-dichlorobenzene and 1,4-dichlorobenzene were qualified as estimated (*J*) because RPDs of 146 percent and 143 percent, respectively, were calculated. In addition, the results reported for carbon disulfide were qualified as estimated (*J*) because this analyte was not detected in one sample (SD0010) but was reported as detected in the other samples (SD0011). The qualification of these data is considered as conservative and does not indicate imprecision of the entire set.

- For the analysis of PCBs in Samples SD0010 and SD0011, the results reported for Aroclor® 1248 were qualified as estimated (*J*) because an RPD of 55 percent was calculated.

- For the analysis of organochlorine pesticides in Samples SD0010 and SD0011, the results reported for γ-BHC and endrin aldehyde were qualified as estimated (*J*) because RPDs of 65 percent and 88 percent, respectively, were calculated. In addition, the results reported for δ-BHC and endosulfan sulfate were qualified as estimated (*J*) because these analytes were not detected in one sample (SD0010), but were reported as detected in the other sample (SD0011). The qualification of these data is considered as conservative and does not indicate imprecision of the entire set.

- For the analysis of organochlorine pesticides in Samples SD0017 and SD0018, the result reported for endrin ketone was qualified as estimated (*J*) because an RPD of 114 percent was calculated. In addition, the results reported for γ-BHC was qualified as estimated (*J*) because this analyte was not detected in one sample (SD0017), but was reported as detected in the other sample (SD0017). The qualification of these data is considered as conservative and does not indicate imprecision of the entire set.

- For the analysis of PCDD/Fs in Samples SD0010 and SD0011, the results reported for total HpCDD, OCDD, 1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDF, and 2,3,4,6,7,8-HxCDF, 1,2,3,7,8-PeCDD, and 1,2,3,4,6,7,8-HpCDD were qualified as estimated (*J*) because RPDs of 51 percent, 67 percent, 54 percent, 66 percent, 53 percent, 55 percent, and 52 percent respectively, were calculated.

Identification and Quantification of Analytes

Identification requirements for organic and inorganic analytes are provided in each method description and involve such factors as retention times and chromatographic pattern matches for gas chromatography methods, mass spectra for mass spectrometry methods, and wavelengths of atomic emissions for ICP/AES analyses. Quantification of analyte concentrations involves calculation of concentrations with respect to standards; correction for starting weights or volumes, dilutions, and moisture content in the samples; and determination and correct calculation of reporting limits and detection limits for each analyte in each sample type and dilution level. Verification of analyte quantification and identification were the responsibility of the laboratory. During data validation, results were qualified based on information provided in the case narratives and data summaries and verified in the instrument printouts, as described below.

Method detection limits (MDLs) and method reporting limits (MRLs) generally met project DQIs specified in the QAPP (Exponent 2004, Appendix B). In some instances, elevated MDLs and MRLs were reported when sample dilution was required to conduct the analysis. Sample dilution was required when elevated concentrations of target analytes or matrix interferences, or both, prevented reliable identification and quantification of the target analytes in the sample. All numerical results were reported to the MDL. Results for organic target analytes reported at a concentration between the MDL and the MRL were assigned a J-flag by the laboratory. These results were additionally qualified as estimated (*J*) during data validation because they are less accurate than concentrations that are within the calibration range of the instrument. This reason resulted in the qualification of 1,275 results (8 percent of the data set) as estimated (*J*).

- For the analysis of metals in sediment samples, a recovery of 47 percent was reported for magnesium in the ICP interference check sample analysis. This recovery is low; therefore, the 30 results reported for this metal were qualified as estimated (*J*).

- For the analysis of PCDD/Fs, some analytes were reported as detected at an estimated maximum possible concentration (EMPC). An EMPC is reported when identification criteria (typically ion abundance ratios) for an analyte are

> not strictly met. Results that represent EMPCs are biased high. This reason resulted in the qualification of 59 results (0.4 percent of the data set) as estimated (*J*); a total of 29 sediment, 7 crab tissue, 22 fish tissue, and 1 equipment rinsate blank results reported as EMPCs were affected.

CAS indicated in its case narratives that the presence of multiple PCB mixtures (as Aroclors®) hindered the identification and quantification of the Aroclors®, especially for the analysis of sediment samples. When mixtures of PCBs are present in a sample, correct identification and quantitative analysis of the individual Aroclors® can be subjective. A statement similar to the following was included in the case narrative:

> A review of the sample chromatograms indicated the presence of PCB patterns that spanned the entire elution range from Aroclor 1248 through the end of Aroclor 1260. Based on individual PCB peaks in the early portion of the chromatogram, Aroclor 1248 was identified and quantitated. Aroclor 1260 was identified based on the presence of PCB peaks eluting late in the chromatogram. The remainder of the PCB pattern was identified as Aroclor 1254 because PCB peak height in the middle of the chromatogram was larger than could be attributed to either Aroclor 1248, or Aroclor 1260.
>
> When Aroclor mixtures are present in a sample, care is taken to minimize the possibility of double-counting PCBs. Analytical peaks are selected based on the best resolution possible for that particular sample. However, when a mixture of Aroclors 1248, 1254, and 1260 is present in a sample, the potential exists for a high bias from contribution of one Aroclor to another due to common peaks or peaks that cannot be completely resolved.

Because of the presence of multiple PCB mixtures in the sediment samples, all results reported as detected for the organochlorine pesticides were qualified as estimated (*J*). These data (222 results, or 1 percent of the data set) were qualified because there is a greater degree of coelution with individual PCB congeners that can result in the reporting of false positive results and/or a high bias in the concentration reported as detected.

The use of two dissimilar columns for gas chromatographic determinations provides confirmation of analyte identity as well as concentration. The difference between the concentrations reported from the two dissimilar chromatographic columns must be less than 40 percent. Selected results for organochlorine pesticides and PCBs were qualified as estimated when the difference between the concentrations reported from the two chromatographic columns did not meet the 40 percent difference control limit. A total of 402 organochlorine pesticide and PCB results (3 percent of the data set) were qualified as estimated (*J*) because the 40 percent difference control limit was not met. This included 118 sediment, 167 fish tissue, 11 crab tissue, 8 mammal tissue, 3 terrestrial invertebrate tissue, 19 marsh vegetation tissue, and 76 bioaccumulation tissue results.

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Table

Table B1-1. Summary of samples collected, laboratory sample numbers, laboratory sample delivery groups identifiers, and analyses completed

Matrix	Station No.	Sample No.	SDG No.	Laboratory Sample No.	Laboratory Sample No. for PCDD/Fs	Analyses Completed												
						Metals	Organochlorine Pesticides	PCBs	SVOCs[a]	VOCs	PCDD/Fs	Total solids	Grain size distribution	pH	TOC	Cyanide	AVS/SEM	Lipids
Sediment	TERRREF1	SD0001	K2407941	K207951-001	E0401032-001.01	x	x	x		x	x	x	x	x	x	x	x	
	13A	SD0002	K2407941	K207951-002		x	x	x		x		x	x	x	x	x	x	
	22	SD0003	K2407941	K207951-003		x	x	x		x		x	x	x	x	x	x	
	18A	SD0004	K2407941	K207951-004		x	x	x		x		x	x	x	x	x	x	
	19	SD0005	K2407941	K207951-005		x	x	x		x		x	x	x	x	x	x	
	11A	SD0006	K2407941	K207951-006		x	x	x		x		x	x	x	x	x	x	
	16	SD0007	K2407941	K207951-007		x	x	x		x		x	x	x	x	x	x	
	5	SD0008	K2407941	K207951-008		x	x	x		x		x	x	x	x	x	x	
	6	SD0009	K2407941	K207951-009		x	x	x		x		x	x	x	x	x	x	
	8	SD0010	K2407941	K207951-010	E0401032-002.01	x	x	x		x	x	x	x	x	x	x	x	
	8 (field dup)	SD0011	K2407941	K207951-011	E0401032-003.01	x	x	x		x	x	x	x	x	x	x	x	
	9	SD0012	K2407941	K207951-012	E0401032-004.01	x	x	x		x	x	x	x	x	x	x	x	
	AQUAREF2	SD0013	K2407941	K207951-013		x	x	x		x		x	x	x	x	x	x	
	AQUAREF3	SD0014	K2407941	K207951-014	E0401032-005.01	x	x	x		x	x	x	x	x	x	x	x	
	TERRREF2	SD0015	K2407941	K207951-015		x	x	x		x		x	x	x	x	x	x	
	12	SD0016	K2407941	K207951-016		x	x	x		x		x	x	x	x	x	x	
	17	SD0017	K2407941	K207951-017		x	x	x		x		x	x	x	x	x	x	
	17 (field dup)	SD0018	K2407941	K207951-018		x	x	x		x		x	x	x	x	x	x	
	13	SD0019	K2407941	K207951-019		x	x	x		x		x	x	x	x	x	x	
	14	SD0020	K2407941	K207951-020		x	x	x		x		x	x	x	x	x	x	
	TERRREF3	SD0021	K2407941	K207951-021		x	x	x		x		x	x	x	x	x	x	
	4	SD0022	K2407941	K207951-022		x	x	x		x		x	x	x	x	x	x	
	3	SD0023	K2407941	K207951-023		x	x	x		x		x	x	x	x	x	x	
	2	SD0024	K2407941	K207951-024		x	x	x		x		x	x	x	x	x	x	
	1	SD0025	K2407941	K207951-025		x	x	x		x		x	x	x	x	x	x	
	AQUAREF1	SD0026	K2407941	K207951-026		x	x	x		x		x	x	x	x	x	x	
	20	SD0027	K2407941	K207951-027	E0401032-006.01						x							
	15	SD0028	K2407941	K207951-028	E0401032-007.01						x							
	23	SD0029	K2407941	K207951-029	E0401032-008.01						x							
	24	SD0030	K2407941	K207951-030	E0401032-009.01						x							
	AQUAREF5	SD0031	K2407941	K207951-031		x	x	x	x	x		x	x	x	x	x	x	
	AQUAREF4	SD0032	K2407941	K207951-032		x	x	x	x	x		x	x	x	x	x	x	
	10	SD0033	K2407941	K207951-033		x	x	x	x	x		x	x	x	x	x	x	
	7R	SD0034	K2407941	K207951-034		x	x	x	x	x		x	x	x	x	x	x	
Fish	1	FI0079	K2408294	K2408294-001		x	x	x	x			x						x
	1	FI0080	K2408294	K2408294-002		x	x	x	x			x						x
	1	FI0081	K2408294	K2408294-003		x	x	x	x			x						x
	2	FI0082	K2408294	K2408294-004		x	x	x	x			x						x
	2	FI0083	K2408294	K2408294-005		x	x	x	x			x						x
	2	FI0084	K2408294	K2408294-006		x	x	x	x			x						x

Table B1-1. (cont.)

Matrix	Station No.	Sample No.	SDG No.	Laboratory Sample No.	Laboratory Sample No. for PCDD/Fs	Analyses Completed												
						Metals	Organochlorine Pesticides	PCBs	SVOCs[a]	VOCs	PCDD/Fs	Total solids	Grain size distribution	pH	TOC	Cyanide	AVS/SEM	Lipids
Fish (cont.)	3	FI0085	K2408294	K2408294-007		x	x	x	x			x						x
	3	FI0086	K2408294	K2408294-008		x	x	x	x			x						x
	3	FI0087	K2408294	K2408294-009		x	x	x	x			x						x
	4	FI0088	K2408294	K2408294-010		x	x	x	x			x						x
	4	FI0089	K2408294	K2408294-011		x	x	x	x			x						x
	4	FI0090	K2408294	K2408294-012		x	x	x	x			x						x
	5	FI0091	K2408294	K2408294-013		x	x	x	x			x						x
	5	FI0092	K2408294	K2408294-014		x	x	x	x			x						x
	5	FI0093	K2408294	K2408294-015		x	x	x	x			x						x
	6	FI0094	K2408294	K2408294-016		x	x	x	x			x						x
	6	FI0095	K2408294	K2408294-017		x	x	x	x			x						x
	6	FI0096	K2408294	K2408294-018		x	x	x	x			x						x
	7R	FI0097	K2408294	K2408294-019		x	x	x	x			x						x
	7R	FI0098	K2408294	K2408294-020		x	x	x	x			x						x
	7R	FI0099	K2408294	K2408294-021		x	x	x	x			x						x
	8	FI0100	K2408294	K2408294-022	E0401206-001.01	x	x	x	x		x	x						x
	8	FI0101	K2408294	K2408294-023	E0401206-002.01	x	x	x	x		x	x						x
	8	FI0102	K2408294	K2408294-024	E0401206-003.01	x	x	x	x		x	x						x
	9	FI0103	K2408294	K2408294-025	E0401206-004.01	x	x	x	x		x	x						x
	9	FI0104	K2408294	K2408294-026	E0401206-005.01	x	x	x	x		x	x						x
	9	FI0105	K2408294	K2408294-027		x	x	x	x			x						x
	10	FI0106	K2408294	K2408294-028		x	x	x	x			x						x
	10	FI0107	K2408294	K2408294-029		x	x	x	x			x						x
	10	FI0108	K2408294	K2408294-030		x	x	x	x			x						x
	AQUAREF1	FI0109	K2408294	K2408294-031	E0401206-006.01	x	x	x	x		x	x						x
	AQUAREF1	FI0110	K2408294	K2408294-032	E0401206-007.01	x	x	x	x		x	x						x
	AQUAREF1	FI0111	K2408294	K2408294-033	E0401206-008.01	x	x	x	x		x	x						x
	AQUAREF4	FI0112	K2408294	K2408294-034		x	x	x	x			x						x
	AQUAREF4	FI0113	K2408294	K2408294-035		x	x	x	x			x						x
Crab	3	Comp Station 3	K2408316	K2408316-004		x	x	x				x						x
	5	Comp Station 5	K2408316	K2408316-007		x						x						
	6	Comp Station 6	K2408316	K2408316-010		x	x	x	x			x						x
	7	Comp Station 7	K2408316	K2408316-013		x	x	x	x			x						x
	8	Comp Station 8	K2408316	K2408316-016	E0401202-001.01	x					x	x						x
	9	Comp Station 9	K2408316	K2408316-019	E0401202-002.01	x	x	x	x		x	x						x
	10	CR0005	K2408316	K2408316-020		x	x	x				x						x
	AQUAREF1	Comp Aqua Ref1	K2408316	K2408316-024	E0401202-003.01	x					x	x						x
	AQUAREF4	Comp Aqua Ref4	K2408316	K2408316-028		x												x

Table B1-1. (cont.)

						Analyses Completed												
Matrix	Station No.	Sample No.	SDG No.	Laboratory Sample No.	Laboratory Sample No. for PCDD/Fs	Metals	Organochlorine Pesticides	PCBs	SVOCs[a]	VOCs	PCDD/Fs	Total solids	Grain size distribution	pH	TOC	Cyanide	AVS/SEM	Lipids
Small mammal	TERRREF1	SM0001	K2408037	K2408037-001		x	x	x	x			x						x
	13A	SM0002	K2408037	K2408037-002		x	x	x	x			x						x
	11A	SM0003	K2408037	K2408037-003		x	x	x				x						x
	22	SM0004	K2408037	K2408037-004		x	x	x	x			x						x
	14A	SM0005	K2408037	K2408037-005		x	x	x	x			x						x
	14A (field dup)	SM0006	K2408037	K2408037-006		x	x	x				x						x
Terrestrial invertebra	Site	TI0001	K2407929	K2407929-008		x	x	x				x						x
	Reference	TI0002	K2407929	K2407929-009		x	x	x				x						x
Marsh vegetation	14	PH0001	K2407929	K2407929-001		x	x	x	x			x						
	14	PH0002	K2407929	K2407929-002		x	x	x	x			x						
	13	PH0003	K2407929	K2407929-003		x	x	x	x			x						
	13A	PH0004	K2407929	K2407929-004		x	x	x	x			x						
	TERRREF1	PH0005	K2407929	K2407929-005		x	x	x	x			x						
	11A	PH0006	K2407929	K2407929-006		x	x	x	x			x						
	22	PH0007	K2407929	K2407929-007		x	x	x	x			x						
Bioaccumulation	QC	Control	K2409734	K2409734-001		x	x	x	x			x						x
(Earthworm)	QC	Initial control	K2409734	K2409734-002		x	x	x	x			x						x
	TERRREF1	SD0001	K2409734	K2409734-003		x	x	x	x			x						x
	13A	SD0002	K2409734	K2409734-004		x	x	x				x						x
	22	SD0003	K2409734	K2409734-005		x	x	x				x						x
	18A	SD0004	K2409734	K2409734-006		x	x	x				x						x
	19	SD0005	K2409734	K2409734-007		x	x	x				x						x
	11A	SD0006	K2409734	K2409734-008		x	x	x				x						x
	16	SD0007	K2409734	K2409734-009		x	x	x				x						x
	TERRREF2	SD0015	K2409734	K2409734-010		x	x	x				x						x
	12	SD0016	K2409734	K2409734-011		x	x	x				x						x
	17	SD0017	K2409734	K2409734-012		x	x	x				x						x
	13	SD0019	K2409734	K2409734-013		x	x	x	x			x						x
	14	SD0020	K2409734	K2409734-014		x	x	x				x						x
	TERRREF3	SD0021	K2409734	K2409734-015		x	x	x	x			x						x
	QC	Cattle manure	K2409734	K2409734-016		x	x	x	x			x						x
	QC	Cattle manure	K2409734	K2409734-017		x	x	x	x			x						x
Bioaccumulation	QC	Control	K2409730	K2409730-001		x	x	x				x						x
(Blackworm)	QC	Initial control	K2409730	K2409730-002		x	x	x				x						x
	TERRREF1	SD0001	K2409730	K2409730-003		x	x	x				x						x
	13A	SD0002	K2409730	K2409730-004		x	x	x				x						x
	22	SD0003	K2409730	K2409730-005		x	x	x				x						x

Table B1-1. (cont.)

Matrix	Station No.	Sample No.	SDG No.	Laboratory Sample No.	Laboratory Sample No. for PCDD/Fs	Analyses Completed												
						Metals	Organochlorine Pesticides	PCBs	SVOCs[a]	VOCs	PCDD/Fs	Total solids	Grain size distribution	pH	TOC	Cyanide	AVS/SEM	Lipids
Bioaccumulation	18A	SD0004	K2409730	K2409730-006		x	x	x				x						x
(Blackworm, cont.)	19	SD0005	K2409730	K2409730-007		x	x	x				x						x
	11A	SD0006	K2409730	K2409730-008		x	x	x				x						x
	16	SD0007	K2409730	K2409730-009		x	x	x				x						x
	TERRREF2	SD0015	K2409730	K2409730-010		x	x	x				x						x
	17	SD0017	K2409730	K2409730-012		x	x	x				x						x
	13	SD0019	K2409730	K2409730-013		x	x	x				x						x
	14	SD0020	K2409730	K2409730-014		x	x	x				x						x
	TERRREF3	SD0021	K2409730	K2409730-015		x	x	x				x						x
Field Blanks		EB0001	K2407936	K2407936-001	E0401045-001.01	x	x	x	x		x							
		EB0002	K2407936	K2407936-002	E0401045-002.01	x	x	x	x		x							
		EB0003	K2407936	K2407936-003	E0401045-003.01	x	x	x	x		x							
		Trip 1	K2407936	K2407936-001						x								
		Trip 2	K2407936	K2407936-001						x								
		Trip 3	K2407936	K2407936-001						x								
		Trip 4	K2407936	K2407936-001						x								
		Trip 5	K2407936	K2407936-001						x								

Note:
AVS/SEM - acid volatile sulfide/simultaneously extracted metals
PCB - polychlorinated biphenyl
PCDD/F - polychlorinated dibenzo-*p*-dioxin and dibenzofuran
SVOC - semivolatile organic compound
TOC - total organic carbon
VOC - volatile organic compound

[a] For the analysis of SVOCs, the compounds 3-methylphenol and 4-methylphenol cannot be separated by the chromatographic column used for their analysis. These compounds coelute and were quantified as a single peak that represents the sum of the two compounds; quantification was completed by the laboratory using only 4-methylphenol as a reference standard.

Appendix B2

QA/QC Evaluation of Horseshoe Road OU-3 Marsh Sediment Toxicity Test Data

QA/QC Evaluation of Horseshoe Road OU-3 Marsh Sediment Toxicity Test Data

Introduction

This report documents the results of the quality assurance/quality control (QA/QC) review of the data generated from the 10-day blackworm survival test using *Lumbriculus variegatus* and the 14-day earthworm survival and growth test using *Eisenia fetida* performed on 13 marsh sediment samples collected from Operable Unit 3 (OU-3) of the Horseshoe Road and Atlantic Resources Corporation (ARC) Superfund Sites in Sayreville, New Jersey. These tests were conducted by Springborn Smithers Laboratories in Wareham, Massachusetts. The laboratory reports for these tests are presented in Appendix G. Exponent conducted the quality assurance review to ensure that the toxicity testing was consistent with the specifications of the statement of work (SOW) and that the data are acceptable for their intended use in future stages of the baseline ecological risk assessment (BERA) and feasibility study.

The quality assurance review consisted of an evaluation of the following major elements for the bioaccumulation test:

- **Field methods—**Were the major specifications of the field sampling procedures followed, as described in the field sampling and analysis plan (Exponent 2004)?
- **Laboratory system and testing methods—**Were the major specifications of the laboratory testing procedures followed, as described in the laboratory's SOW? Were the specified methods (ASTM 2000a; U.S. EPA 2000; ASTM 2000b) followed and were any modifications adequately justified and documented?
- **Marsh sediment holding time—**Was each marsh sediment sample analyzed within the specified holding time after collection?
- **Water quality conditions—**Were water quality conditions monitored adequately during testing and were the measured conditions within the specified ranges for each test chamber?
- **Negative control responses—**Were the responses in the negative controls (i.e., clean marsh sediment) within specified limits?
- **Positive control responses—**Did the positive controls (i.e., reference toxicant) indicate that the test organisms were suitably responsive for testing?

Throughout this report, the term "replicate" refers to one of the eight replicates of homogenized marsh sediment collected at each station for the 10-day blackworm survival test or to one of the four replicates of homogenized marsh sediment collected at each station for the 14-day earthworm survival and growth test.

The following section of this report presents the results of the QA/QC evaluation for both of the marsh sediment toxicity tests. QA/QC considerations are then summarized, and conclusions are presented in the final section.

Quality Assurance and Quality Control Evaluation

Field Methods

From September 28 to October 4, 2004, marsh sediment samples were collected from 13 marsh sediment samples collected from OU-3 of the Horseshoe Road and ARC Superfund Sites in Sayreville, New Jersey. At each station, surface sediments were collected using a stainless-steel shovel. A single homogenized sediment sample was collected to a marsh sediment depth of 15 cm (0–6 in.) for the 10-day blackworm survival test, the 14-day earthworm survival and growth test, and for the chemical analyses, to ensure that the toxicity test and the chemical analyses were related as closely as possible. The marsh sediment collected at each respective sampling station was composited into a single sample for that station.

Marsh sediment sampling was conducted according to the procedures and plans described in the field sampling and analysis plan (Exponent 2004).

Laboratory System

Water from a 100-m bedrock well was pumped to a concrete reservoir where it was supplemented on demand with untreated, unchlorinated, Town of Wareham (Massachusetts) well water. The water was characterized by the testing laboratory as being “soft” with a normal pH range of 6.9–7.7, a total hardness of 30–60 mg/L and a specific conductance of 110–160 μmhos/cm. The pH, total hardness, alkalinity, and specific conductance of this water was monitored weekly at a central location in the laboratory to assure that these parameters were within the normal, acceptable ranges.

The quality of the water was also judged by periodic analyses of representative samples to ensure the absence of potential toxicants, including pesticides, PCBs, and selected toxic metals, at concentrations that may be harmful to the blackworms, as well as the ability of blackworm cultures to survive and reproduce in the water free of stress.

Marsh sediments were stored at 4°C in the dark until used. Prior to addition into the exposure vessels, all marsh sediment samples and the control were sieved through a 2-mm sieve. All testing was conducted in close adherence to the good laboratory practice requirements as defined in ASTM (1995).

Blackworm Survival Test

This toxicity test measured blackworm survival using the oligochaete *Lumbriculus variegatus* following a 10-day exposure to marsh sediments.

Test Organism and Acclimation

Lumbriculus variegatus cultures were maintained at the Springborn Smithers Laboratory. The oligochaetes were cultured in 57 L aquaria containing approximately 40 L of dilution water under flow-through conditions. Water used to culture oligochaetes was from the same source as the dilution water used for the toxicity tests. Culture water was maintained at 23 ± 1°C.

Test Methods

Overall, the recommended protocols were followed closely during testing. All biological testing was in compliance with ASTM E-1706-95b (ASTM 2000a) and Test Method 100.3 in U.S. EPA (2000). Samples were collected and stored properly. The toxicity test was initiated on October 12, 2004. The test initiation date for all samples was within the specified 14-day holding time.

Eight toxicity test replicates were conducted for each station. For each toxicity test replicate, 10 blackworms per replicate (80 organisms per sediment sample) were used to initiate the test. During the 10-day study, the overlying water was renewed by adding two volume additions (i.e., 350 mL) per day using an intermittent delivery system in combination with a calibrated water-distribution system. The intermittent delivery system was calibrated to provide 1 L of water per cycle to the water-distribution system, which subsequently provided 50 mL of water per cycle to each replicate test chamber. The water delivery system cycled 7 times per day, providing two volume additions every 24 hours. Delivery of two volume replacements per day was sufficient to provide consistent and acceptable water quality characteristics throughout the duration of the 10-day exposure period.

The test vessels were located in an area illuminated to a light intensity of 500 to 1,000 lux, using a combination of fluorescent bulbs. A 16-hour light, 8-hour dark photoperiod was maintained with an automatic timer.

On Day 10, the surviving blackworms in all test chambers were carefully sieved from the marsh sediment and counted. Percent survival was determined relative to the total of 10 individuals added to each chamber at the beginning of the test. In addition, daily observations of organism behavior (e.g., sublethal effects) and characteristics of sediment and overlying water were made and recorded. Dead organisms were removed from the exposure vessels daily. At termination of the study, mean survival of the blackworms in the laboratory control must be >80 percent for the test to be considered acceptable.

Water Quality Measurements

Water quality monitoring was conducted during the blackworm test. Water quality measurements for each variable were within the limits specified in ASTM (2000a) and U.S. EPA (2000). This monitoring consisted of the following measurements:

- Total hardness, alkalinity, conductivity, pH, and ammonia were determined at test initiation and test termination in the overlying water from all eight replicate vessels. The water quality measurement was taken from 1 to 2 cm from the sediment surface using a pipette. Total hardness measured during the testing period ranged from 32 to 136 mg/L (as $CaCO_3$). Alkalinity measured during the testing period ranged from 14 to 40 mg/L (as $CaCO_3$). Conductivity measured during the testing period ranged from 160 to 800 μmhos/cm. Values of pH measured during the testing period ranged from 6.8 to 7.5, which is within the recommended range of 6–8 pH units. Ammonia measured during the testing period ranged from <0.10 to 0.21 mg/L.

- Dissolved oxygen and temperature were measured in all replicate vessels at test initiation and test termination. In addition, dissolved oxygen and temperature were monitored daily in one alternating replicate during the course of the study (test days 1–9). Dissolved oxygen measured during the testing period ranged from 6.0 to 7.9 mg/L. Dissolved oxygen concentrations should be ≥2.5 mg/L throughout the study in all control and test replicates. Temperature was also monitored continuously in the water bath using a minimum-maximum thermometer. Readings of temperature extremes were recorded daily. The daily mean test temperature should be 23 ± 1°C. Temperature measured during the testing period ranged from 22 to 24°C, which is within the recommended range.

Controls

For the blackworm test, a negative control consisting of natural freshwater sediment from Strohs Folly Brook, Wareham, Massachusetts, was used for each analytical group. Mean survival for the control sediment for the blackworm test was 100 percent. Mean survival rates for marsh sediment from the three reference area samples were 94, 98, and 95 percent, respectively. These results suggest that the test organisms were sufficiently healthy for testing.

A positive control was tested using potassium chloride as the reference toxicant. The positive control exhibited a 96-hour LC_{50} value of 350 mg/L, which is within the testing laboratory's control limits for this test. The observed LC_{50} value suggests that the test organisms were suitably sensitive for testing.

Earthworm Survival and Growth Test

This toxicity test measured earthworm survival and growth using *Eisenia fetida* following a 14-day exposure to marsh sediments.

Test Organism and Acclimation

During culturing, earthworms were fed composted cattle manure (sample of which was sent to the chemical testing laboratory for analysis). Prior to test initiation (i.e., 24–48 hours), earthworms were isolated from the culture media and placed in an acclimation vessel containing artificial sediment. This procedure allowed the earthworms sufficient time to eliminate the culture medium and take up artificial sediment so the medium within the earthworms was equivalent at test initiation and termination. In addition, for 2 days prior to initiation, two of the test sediments were air dried, because of excess water in the marsh sediments that could cause mortality of the test organisms (i.e., ≥25 to 35 percent moisture) and mixed well. Marsh sediment was separated into replicate vessels and placed into the test chamber or water bath for overnight equilibration.

Test Methods

Overall, the recommended protocols were followed closely during testing. All biological testing was in compliance with ASTM E-1676-97 (ASTM 2000b). Samples were collected and stored properly. Toxicity tests were performed in two batches and were initiated on October 12 and 18, 2004, respectively. The test initiation date for all samples was within the specified 14-day holding time.

Four toxicity test replicates were conducted for each station. To initiate the test, the earthworms were removed from the acclimation vessel and placed in an empty isolation vessel. Adult earthworms at least two months old (with clitellum), with a minimum wet weight of approximately 300 mg, were used for testing. Ten mature earthworms were impartially selected from the isolation vessel. The earthworms were randomly assigned to a replicate test vessel using a computer-generated random number table. This procedure was repeated until ten earthworms were selected for each replicate test vessel. Earthworm burrowing and/or avoidance behavior was recorded for each replicate.

Four, 500-mL polypropylene beakers were used as test vessels. The vessels were covered with a perforated lids that allowed air exchange. Test vessels were cleaned following standard laboratory procedures to remove contaminants prior to use. Each replicate test vessel contained 200 g of sediment (dry weight). The negative control consisted of 100 percent artificial sediment. Earthworms were not fed during the test.

An assessment of mortality was performed on Days 7 and 14 (test termination) and weight change (percent inhibition from the control weight) was assessed on Day 14. Mortality was assessed on Day 14 by emptying the test medium onto a tray, sorting the earthworms from the medium, and testing their reaction to a mechanical stimulus at the anterior end. Mortality was defined as lack of visible movement after gentle mechanical stimulation. The general health of the earthworms was assessed and recorded (e.g., color changes, lethargy, softness, lesions and/or the presence of cocoons). The total weight of surviving earthworms in each replicate test vessel was measured on Day 14, after adhered sediment had been removed with water.

At test termination, mean survival of the earthworms in the laboratory control (100 percent artificial sediment) must be >90 percent for the test to be considered acceptable.

Monitoring of Environmental Conditions

Environmental conditions were monitored for all test and reference sediments and negative control. Environmental conditions for each variable should be within the limits specified in ASTM (2000b). This monitoring of soil quality variables consisted of the following measurements:

- Sediment moisture content, pH, and temperature were measured in one replicate vessel per sample or control at the initiation and termination, day 14. Sediment moisture content measured during the testing period ranged from 21.8 to 42.3 percent. Values of pH measured during the testing period ranged from 2.8 to 6.7, which is slightly outside the recommended range of 5–7 pH units. Temperature measured during the testing period ranged from 20 to 22°C, which is within the recommended range.

Controls

For the earthworm test, the medium utilized for the control consisted of the following components on a weight basis:

- 70 percent industrial sand (50 percent of the particles were 50 to 100 μm in diameter)
- 20 percent kaolin clay
- 10 percent sphagnum peat (finely ground)
- $CaCO_3$ or phosphoric acid to adjust pH to 6.0 ± 0.5, if necessary.

The dry ingredients were thoroughly mixed in a suitable mixer. A measured quantity of deionized water was added during mixing to yield a percent moisture content of approximately 28 percent. Mean survival for the control medium for the earthworm test was 100 percent. Mean survival rates for marsh sediment from the three reference area samples were all 100 percent. These results suggest that the test organisms were sufficiently healthy for testing.

Summary of Quality Assurance and Quality Control Considerations

Mean survival for the control freshwater sediment for the blackworm test was 100 percent. For the testing to be considered acceptable, a minimum mean survival of 80 percent must occur in the negative controls. These results meet the performance standards set for the blackworm survival test (ASTM 2000a; U.S. EPA 2000).

Mean survival for the control soil for the earthworm test was 100 percent. Mean percent change in the growth for the control was 0.45 percent. For the testing to be considered acceptable, a minimum mean survival of 90 percent must occur in the negative controls. These results meet the performance standards set for the earthworm survival and growth test (ASTM 2000b).

During the testing period, there were no inconsistencies with the specifications provided in the SOW for the blackworm survival test and only one inconsistency for the earthworm survival test (i.e., 5 of the 26 pH values measured during the testing period were less than 5 pH units, which is outside the lower recommended range for this test). However, because the test results of all treatments exceeded 90 percent for survival, it is not anticipated that this deviation affected the results. Therefore, the data are determined to be acceptable for use in the BERA and feasibility study for OU-3 of the Horseshoe Road and ARC Superfund Sites.

References

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Appendix B3

QA/QC Evaluation of Horseshoe Road OU-3 Marsh Sediment Bioaccumulation Test Data

QA/QC Evaluation of Horseshoe Road OU-3 Marsh Sediment Bioaccumulation Test Data

Introduction

This report documents the results of the quality assurance/quality control (QA/QC) review of the data generated from the 28-day blackworm bioaccumulation test using *Lumbriculus variegatus* and the 28-day earthworm bioaccumulation test using *Eisenia fetida* performed on 13 marsh sediment samples collected from Operable Unit 3 (OU-3) of the Horseshoe Road and Atlantic Resources Corporation (ARC) Superfund Sites in Sayreville, New Jersey. These tests were conducted by Springborn Smithers Laboratories in Wareham, Massachusetts. Exponent conducted the quality assurance review to ensure that the bioaccumulation testing was consistent with the specifications of the statement of work (SOW) and that the data are acceptable for their intended use in future stages of the baseline ecological risk assessment (BERA) and feasibility study.

The quality assurance review consisted of an evaluation of the following major elements for the bioaccumulation test:

- **Field methods—**Were the major specifications of the field sampling procedures followed, as described in the field sampling and analysis plan (Exponent 2004)?
- **Laboratory system and testing methods—**Were the major specifications of the laboratory testing procedures followed, as described in the laboratory's SOW? Were the specified methods (ASTM 2000a; U.S. EPA 2000; ASTM 2000b) followed and were any modifications adequately justified and documented?
- **Marsh sediment holding time—**Was each marsh sediment sample analyzed within the specified holding time after collection?
- **Water quality conditions—**Were water quality conditions monitored adequately during testing and were the measured conditions within the specified ranges for each test chamber?
- **Negative control responses—**Were the responses in the negative controls (i.e., clean marsh sediment) within specified limits?
- **Positive control responses—**Did the positive controls (i.e., reference toxicant) indicate that the test organisms were suitably responsive for testing?

Throughout this report, the term "replicate" refers to one of the five replicates of homogenized marsh sediment collected at each station for the 28-day blackworm bioaccumulation test or to one of the two replicates of homogenized marsh sediment collected at each station for the 28-day earthworm bioaccumulation test.

The following section of this report presents the results of the QA/QC evaluation for both of the marsh sediment bioaccumulation tests. QA/QC considerations are then summarized, and conclusions are presented in the final section.

Quality Assurance and Quality Control Evaluation

Field Methods

From September 28 to October 4, 2004, marsh sediment samples were collected from 13 marsh sediment samples collected from OU-3 of the Horseshoe Road and ARC Superfund Sites in Sayreville, New Jersey. At each station, surface sediment was collected using a stainless-steel shovel. A single homogenized sample was collected to a sediment depth of 15 cm (0–6 in.) for the blackworm bioaccumulation test, the earthworm bioaccumulation test, and for the chemical analyses, to ensure that the bioaccumulation tests and the chemical analyses were related as closely as possible. The marsh sediment collected at each respective sampling station was composited into a single sample for that station.

Marsh sediment sampling was conducted according to the procedures and plans described in the field sampling and analysis plan (Exponent 2004).

Laboratory System

Water from a 100-m bedrock well was pumped to a concrete reservoir where it was supplemented on demand with untreated, unchlorinated, Town of Wareham (Massachusetts) well water. The water was characterized by the testing laboratory as being "soft" with a normal pH range of 6.9–7.7, a total hardness of 30–60 mg/L, and a specific conductance of 110–160 μmhos/cm. The pH, total hardness, alkalinity, and specific conductance of this water was monitored weekly at a central location in the laboratory to assure that these parameters were within the normal, acceptable ranges.

The quality of the water was also judged by periodic analyses of representative samples to ensure the absence of potential toxicants, including pesticides, PCBs and selected toxic metals, at concentrations which may be harmful to the blackworms, as well as the ability of blackworm cultures to survive and reproduce in the water free of stress.

Marsh sediments were stored at 4°C in the dark until used. Prior to addition into the exposure vessels, all marsh sediment samples and the control were sieved through a 2-mm sieve. All testing was conducted in close adherence to the good laboratory practice requirements as defined in (ASTM 1995).

Blackworm Bioaccumulation Test

This test measured bioaccumulation potential in blackworms (oligochaetes) exposed for 28 days to test sediment. The test species was *Lumbriculus variegatus*. Test protocols are described in detail in U.S. EPA (2000) and are briefly described below.

Test Organism and Acclimation

Lumbriculus variegatus cultures were maintained at the Springborn Smithers Laboratory. The blackworms were cultured in 57 L aquaria containing approximately 40 L of dilution water under flow-through conditions. Water used to culture blackworms was from the same source as the dilution water used for the bioaccumulation tests. Culture water was maintained at 23 ± 1°C.

Test Methods

Overall, the recommended protocols were followed closely during testing. All biological testing was in compliance with Test Method 100.3 in U.S. EPA (2000). Samples were collected and stored properly. The bioaccumulation test was initiated on October 12, 2004. The test initiation date for all samples was within the specified 14-day holding time.

Before starting the 28-day sediment bioaccumulation test with *L. variegatus*, a 4-day toxicity screening test was conducted using procedures provided in U.S. EPA (2000). Test chambers were 300-mL high-form beakers containing 100 mL of sediment and 175 mL of overlying water. Ten adult blackworms per replicate were used to start a test. Four replicates were maintained for the toxicity screening tests. Blackworms were not fed during the screening test. Overlying water in each test chamber was renewed daily using water similar to the water used in the bioaccumulation test. Endpoints monitored at the end of the toxicity screening test were number of organisms and behavior. Numbers of *L. variegatus* in the toxicity screening test should not be significantly reduced in the test sediment relative to the control sediment. In addition, test organisms should burrow into test sediment.

The day before test initiation (Day −1) test sediments and laboratory control sediments were added to the replicate test vessels and the overlying water was added. The water was added gently to prevent resuspension of the sediment layer in the water column. This allowed the sediment and water to equilibrate prior to addition of the test organisms. Adult blackworms of approximately the same size were randomly selected from the *L. variegatus* culture maintained at the testing laboratory. Fine mesh nets and wide-bore pipettes were used to remove and transfer the blackworms from the cultures to the test system, taking care to minimize possible stress due to handling. Blackworms that were damaged or dropped during transfer were not used.

The test vessels used in the bioaccumulation test were 1-L glass vessels. Each test vessel was chemically clean. Each aquarium had a 2-cm hole cut on the top portion of the vessel and was covered with 40-mesh Nitex® screen for drainage. Each vessel contained approximately 200 to 400 g (approximately a 2.5- to 5-cm layer) of sediment and 500 to 600 mL of overlying water

(6- to 7-cm water column depth). During the 28-day bioaccumulation study, the overlying water in each vessel was renewed by adding two volume replacements (i.e., 1 to 1.2 L) per day.

Five replicates were maintained for each sediment sample consisting of 100 percent whole sediment sample (no dilutions). In addition, a laboratory control sediment, collected by the laboratory, was also used to evaluate the test organisms. The laboratory control sediment test was also conducted with five replicates. Five grams of blackworms per replicate (25 g of blackworms per sediment sample or control) were used to initiate the test. The ratio of total organic carbon in sediment to organism dry weight should be no less than 50:1 (5 g/replicate). Blackworms were not fed during the bioaccumulation test.

At termination of the test, the sediment in each replicate was sieved through a 0.5 mm sieve and all surviving blackworms were removed. The live blackworms from each replicate were transferred to a 1-L beaker containing clean overlying water (without sediment) for 24 hours to eliminate their gut contents. The mass of blackworms in each replicate was then blotted and weighed. Following weighing, the blackworms from each treatment and control group were composited and frozen. The frozen tissue was shipped on dry ice to the analytical laboratory for analysis.

Water Quality Measurements

Water quality monitoring was conducted during the blackworm test. Water quality measurements for each variable were within the limits specified in U.S. EPA (2000). This monitoring consisted of the following measurements:

- Total hardness, alkalinity, conductivity, pH, and ammonia in the overlying water were determined at test initiation and test termination from all five replicate vessels. The water quality measurement was taken from 1 to 2 cm from the sediment surface using a pipette. Total hardness measured during the testing period ranged from 32 to 252 mg/L (as $CaCO_3$). Alkalinity measured during the testing period ranged from 16 to 46 mg/L (as $CaCO_3$). Conductivity measured during the testing period ranged from 160 to 900 μmhos/cm. Values of pH measured during the testing period ranged from 6.0 to 7.5, which is within the recommended range of 6−8 pH units. Ammonia measured during the testing period ranged from <0.10 to 0.34 mg/L.

- Dissolved oxygen and temperature were measured in all replicate vessels at test initiation and on Day 4 (i.e., termination of the toxicity screening test). In addition, dissolved oxygen and temperature were monitored daily in one alternating replicate during the course of the study (i.e., Days 1−27). Dissolved oxygen measured during the screening testing period ranged from 5.3 to 7.7 mg/L. Dissolved oxygen concentrations should be ≥2.5 mg/L throughout the study in all control and test replicates. Temperature was also monitored continuously in the water bath using a minimum-maximum thermometer. Readings of temperature extremes were recorded daily. The daily mean test temperature should be 23 ± 1°C. Temperature measured during the testing period ranged from 22 to 24°C, which is within the recommended range.

Controls

For the blackworm test, a negative control consisting of natural freshwater sediment from Strohs Folly Brook, Wareham, Massachusetts, was used for each analytical group. Mean survival during the screening testing period (Days 0–4) for the control sediment was 98 percent. Mean survival during the screening testing period (Days 0–4) for marsh sediment from the three reference area samples were 60, 85, and 93 percent, respectively. These results suggest that the test organisms were sufficiently healthy for testing.

The mean wet tissue weight of blackworms (per replicate test vessel) at test termination in the laboratory control was 4.49 g. The mean wet tissue weight of blackworms in the test sediments ranged from 0.07 to 3.82 g per replicate test vessel.

A positive control was tested using potassium chloride as the reference toxicant. The positive control exhibited a 96-hour LC_{50} value of 350 mg/L, which is within the testing laboratory's control limits for this test. The observed LC_{50} value suggests that the test organisms were suitably sensitive for testing.

Earthworm Bioaccumulation Test

This test measured bioaccumulation potential in earthworms exposed for 28 days to test sediment. The test species was *Eisenia fetida*. Test protocols are described in detail in ASTM E-1676-97 (ASTM 2000b) and are briefly described below.

Test Organism and Acclimation

During culturing, earthworms were fed composted cattle manure (sample of which was sent to the chemical testing laboratory for analysis). Prior to test initiation (i.e., 24–48 hours), earthworms were isolated from the culture media and placed in an acclimation vessel containing artificial sediment. This procedure allowed the earthworms sufficient time to eliminate the culture medium and take up artificial sediment so the medium within the earthworms was equivalent at test initiation and termination. In addition, for 2 days prior to initiation, four of the test sediments were air dried, because of excess water in the marsh sediments that could cause mortality of the test organisms (i.e., ≥25 to 35 percent moisture) and mixed well. Marsh sediment was separated into replicate vessels and placed into the test chamber or water bath for overnight equilibration.

Test Methods

Overall, the recommended protocols were followed closely during testing. All biological testing was in compliance with ASTM E-1676-97 (ASTM 2000b). Samples were collected and stored properly. The bioaccumulation tests were performed in two batches and were initiated on

October 12 and 18, 2004, respectively. The test initiation date for all samples was within the specified 14-day holding time.

Two replicate samples were conducted for each station; 1.5 kg of sediment was placed in each replicate. To initiate the test, the earthworms were removed from the acclimation vessel and placed in an empty isolation vessel. Adult earthworms at least two months old (with clitellum), with a minimum wet weight of approximately 300 mg, were used for testing. Earthworms were fed 50 g (dry weight) of dried cattle manure per kilogram of soil per vessel. A sample dried of the cattle manure (36 oz) used for this earthworm bioaccumulation test was collected by the laboratory and sent to the chemical testing laboratory (Columbia Analytical Services in Kelso, Washington) for analysis.

Glass 4-L jars were used as test vessels. The vessels were covered with a perforated lids that allow air exchange. Test vessels were cleaned following standard laboratory procedures to remove contaminants prior to use.

A negative control prepared with artificial sediment was included to demonstrate survival of the test organisms in a standard medium and provide unexposed tissue for background analysis. A sufficient amount of earthworms to conduct the test was isolated from the culture and transferred to the test vessels. Sixty worms (i.e., total tissue mass of 30 g per sample) was added to each replicate containing 1.5 kg of sediment, respectively. The appropriately sized population was arbitrarily removed from the culture, randomly assigned to a test vessel and placed on the sediment surface. This procedure was repeated until each test vessel contained the required amount of earthworms.

At test termination on Day 28, earthworm survival and growth measurements were performed. Survival was assessed by emptying the test medium onto a tray, sorting the earthworms from the medium, and testing their reaction to a mechanical stimulus at the anterior end. Survival was defined as visible movement after gentle mechanical stimulation was applied. The general health of the earthworms was also assessed and recorded (e.g., color changes, lethargy, softness, lesions and/or the presence of cocoons). The surviving earthworms in each replicate were then rinsed with distilled water to remove sediment particles, blotted dry and placed between moist filter paper and weighed. The earthworms remained on the filter paper for approximately 24 hours to depurate. Earthworms were then rinsed, reweighed, and frozen. The frozen tissue was shipped on dry ice to the chemical testing laboratory for analysis of selected analytes.

Monitoring of Environmental Conditions

Environmental conditions were monitored for all test and reference sediments, as well as the negative control. Environmental conditions for each variable should be within the limits specified in ASTM (2000b). This monitoring of soil quality variables consisted of the following measurements:

- Sediment moisture content, pH, and temperature were measured in one replicate vessel per sample or control at the initiation and termination, day 14. Sediment moisture content measured during the testing period ranged from 21.7 to 42.3 percent. Values of pH measured during the testing period ranged from 3.1 to 6.3, which is slightly outside the recommended range of 5–7 pH units. Temperature measured during the testing period was 21°C, which is within the recommended range.

Controls

For the earthworm test, the medium utilized for the control consisted of the following components on a weight basis:

- 70 percent industrial sand (50 percent of the particles were 50 to 100 μm)
- 20 percent kaolin clay
- 10 percent sphagnum peat (finely ground)
- $CaCO_3$ or phosphoric acid to adjust pH to 6.0 ± 0.5, if necessary.

The dry ingredients were thoroughly mixed in a suitable mixer. A measured quantity of deionized water was added during mixing to yield a percent moisture content of approximately 28 percent. Mean survival for the control medium for the earthworm test was 100 percent. Mean survival for marsh sediment from the three reference area samples were all 100 percent. These results suggest that the test organisms were sufficiently healthy for testing.

Summary of Quality Assurance and Quality Control Considerations

Mean survival during the screening testing period (Days 0–4) for the control sediment for the blackworm test was 98 percent. For the testing to be considered acceptable, a minimum mean survival of 80 percent must occur in the negative controls. These results meet the performance standards set for the blackworm survival test (U.S. EPA 2000).

Mean survival for the control soil for the earthworm test was 100 percent. For the testing to be considered acceptable, a minimum mean survival of 90 percent must occur in the negative controls. These results meet the performance standards set for the earthworm survival and growth test (ASTM 2000b).

During the testing period, there were no inconsistencies with the specifications provided in the SOW for the blackworm survival test and only one inconsistency for the earthworm survival test (i.e., 10 of the 26 pH values measured during the testing period were less than 5 pH units, which is outside the lower recommended range for this test). However, because the test results for all of these 10 treatments exceeded 90 percent for survival, it is not anticipated that this deviation affected the results. Therefore, the data are determined to be acceptable for use in the BERA and feasibility study for OU-3 of the Horseshoe Road and ARC Superfund Sites.

References

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Appendix C

Chemical Data from 2004 Supplemental Field Investigation

Contents

Table C-1. Volatile organic compound results for river and marsh sediment

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	1,1,1-Trichloroethane (µg/kg dry)	1,1,2,2-Tetrachloro-ethane (µg/kg dry)	1,1,2-Trichloroethane (µg/kg dry)	1,1-Dichloroethane (µg/kg dry)	1,1-Dichloroethene (µg/kg dry)	1,2,4-Trichloro-benzene (µg/kg dry)
River												
1	river	SD0025	10/5/2004	0	0	6	0.88 *U*	1.2 *U*	1.1 *U*	1.2 *U*	1.1 *U*	1.2 *U*
2	river	SD0024	10/5/2004	0	0	6	1.2 *U*	1.5 *U*	1.4 *U*	1.6 *U*	1.4 *U*	1.6 *U*
3	river	SD0023	10/5/2004	0	0	6	2.4 *U*	3.0 *U*	2.8 *U*	3.2 *U*	2.8 *U*	3.2 *U*
4	river	SD0022	10/5/2004	0	0	6	1.7 *U*	2.2 *U*	2.1 *U*	2.3 *U*	2.1 *U*	2.3 *U*
5	river	SD0008	10/1/2004	0	0	6	0.98 *U*	1.3 *U*	1.2 *U*	1.4 *U*	1.2 *U*	1.4 *U*
6	river	SD0009	10/1/2004	0	0	6	0.93 *U*	1.2 *U*	1.2 *U*	1.3 *U*	1.2 *U*	1.3 *U*
7R	river	SD0034	10/6/2004	0	0	6	0.77 *U*	0.99 *U*	0.94 *U*	1.1 *U*	0.94 *U*	1.1 *U*
8	river	SD0010	10/1/2004	1	0	6	1.1 *U*	1.4 *U*	1.3 *U*	1.5 *U*	1.3 *U*	1.5 *U*
8	river	SD0011	10/1/2004	2	0	6	1.2 *U*	1.5 *U*	1.4 *U*	1.6 *U*	1.4 *U*	1.6 *U*
9	river	SD0012	10/1/2004	0	0	6	0.97 *U*	1.3 *U*	1.2 *U*	1.4 *U*	1.2 *U*	1.4 *U*
10	river	SD0033	10/6/2004	0	0	6	0.95 *U*	1.3 *U*	1.2 *U*	1.3 *U*	1.2 *U*	1.3 *U*
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	1.2 *U*	1.5 *U*	1.4 *U*	1.6 *U*	1.4 *U*	1.6 *U*
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	1.3 *U*	1.7 *U*	1.6 *U*	1.8 *U*	1.6 *U*	1.7 *U*
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	2.0 *U*	2.6 *U*	2.5 *U*	2.8 *U*	2.5 *U*	2.8 *U*
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	0.87 *U*	1.2 *U*	1.1 *U*	1.2 *U*	1.1 *U*	1.2 *U*
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	0.76 *U*	0.97 *U*	0.92 *U*	1.1 *U*	0.92 *U*	1.1 *U*
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	2.4 *U*	3.0 *U*	2.9 *U*	3.2 *U*	2.9 *U*	3.2 *U*
13	marsh	SD0019	10/4/2004	0	0	6	1.2 *U*	1.5 *U*	1.5 *U*	1.7 *U*	1.5 *U*	1.6 *U*
14	marsh	SD0020	10/4/2004	0	0	6	2.6 *U*	3.4 *U*	3.2 *U*	3.6 *U*	3.2 *U*	3.5 *U*
16	marsh	SD0007	9/29/2004	0	0	6	0.80 *U*	1.1 *U*	0.97 *U*	1.1 *U*	0.97 *U*	1.1 *U*
17	marsh	SD0017	10/4/2004	1	0	6	2.5 *U*	3.2 *U*	3.0 *U*	3.4 *U*	3.0 *U*	3.4 *U*
17	marsh	SD0018	10/4/2004	2	0	6	2.5 *U*	3.2 *U*	3.0 *U*	3.4 *U*	3.0 *U*	3.4 *U*
19	marsh	SD0005	9/29/2004	0	0	6	2.1 *U*	2.7 *U*	2.5 *U*	2.9 *U*	2.5 *U*	18 *J*
11A	upland	SD0006	9/29/2004	0	0	6	0.92 *J*	0.91 *U*	0.86 *U*	0.97 *U*	0.86 *U*	0.95 *U*
13A	upland	SD0002	9/28/2004	0	0	6	0.65 *U*	0.84 *U*	0.79 *U*	0.89 *U*	0.79 *U*	0.88 *U*
18A	upland	SD0004	9/28/2004	0	0	6	0.68 *U*	0.87 *U*	0.82 *U*	0.93 *U*	0.82 *U*	1.9 *J*
22	upland	SD0003	9/28/2004	0	0	6	0.71 *U*	0.91 *U*	0.86 *U*	0.97 *U*	0.86 *U*	0.96 *U*
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	0.84 *U*	1.1 *U*	1.1 *U*	1.2 *U*	1.1 *U*	1.2 *U*
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	0.92 *U*	1.2 *U*	1.2 *U*	1.3 *U*	1.2 *U*	1.3 *U*
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	1.2 *U*	1.5 *U*	1.4 *U*	1.6 *U*	1.4 *U*	1.6 *U*

Table C-1. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	1,2,4,5-Tetrachloro-benzene (µg/kg dry)	1,2-Dibromo-3-chloropropane (µg/kg dry)	1,2-Dibromoethane (µg/kg dry)	1,2-Dichloro-benzene (µg/kg dry)	1,2-Dichloroethane (µg/kg dry)	1,2-Dichloro-propane (µg/kg dry)
River												
1	river	SD0025	10/5/2004	0	0	6	16 *UJ*	1.4 *U*	1.3 *U*	1.0 *U*	1.1 *U*	1.2 *U*
2	river	SD0024	10/5/2004	0	0	6	20 *UJ*	1.8 *U*	1.6 *U*	1.4 *U*	1.4 *U*	1.5 *U*
3	river	SD0023	10/5/2004	0	0	6	100 *UJ*	3.5 *U*	3.2 *U*	2.7 *U*	2.8 *U*	3.0 *U*
4	river	SD0022	10/5/2004	0	0	6	72 *UJ*	2.5 *U*	2.4 *U*	1.9 *U*	2.0 *U*	2.1 *U*
5	river	SD0008	10/1/2004	0	0	6	8.4 *UJ*	1.5 *U*	1.4 *U*	1.2 *U*	1.2 *U*	1.3 *U*
6	river	SD0009	10/1/2004	0	0	6	8.0 *UJ*	1.4 *U*	1.3 *U*	1.1 *U*	1.1 *U*	1.2 *U*
7R	river	SD0034	10/6/2004	0	0	6	6.7 *UJ*	1.2 *U*	1.1 *U*	0.88 *U*	0.91 *U*	0.98 *U*
8	river	SD0010	10/1/2004	1	0	6	9.2 *UJ*	1.6 *U*	1.5 *U*	1.3 *U*	1.3 *U*	1.4 *U*
8	river	SD0011	10/1/2004	2	0	6	20 *UJ*	1.8 *U*	1.6 *U*	1.4 *U*	1.4 *U*	1.5 *U*
9	river	SD0012	10/1/2004	0	0	6	8.4 *UJ*	1.5 *U*	1.4 *U*	1.2 *U*	1.2 *U*	1.3 *U*
10	river	SD0033	10/6/2004	0	0	6	8.1 *UJ*	1.5 *U*	1.4 *U*	1.1 *U*	1.2 *U*	1.2 *U*
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	9.9 *UJ*	1.8 *U*	1.6 *U*	1.4 *U*	1.4 *U*	1.5 *U*
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	22 *UJ*	1.9 *U*	1.8 *U*	1.5 *U*	1.5 *U*	1.6 *U*
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	18 *UJ*	3.0 *U*	2.8 *U*	2.3 *U*	2.4 *U*	2.6 *U*
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	7.5 *UJ*	1.3 *U*	1.3 *U*	0.99 *U*	1.1 *U*	1.1 *U*
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	6.6 *UJ*	1.2 *U*	1.1 *U*	0.87 *U*	0.89 *U*	0.96 *U*
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	21 *UJ*	3.5 *U*	3.3 *U*	2.7 *U*	2.8 *U*	3.0 *U*
13	marsh	SD0019	10/4/2004	0	0	6	11 *UJ*	1.8 *U*	1.7 *U*	1.4 *U*	1.4 *U*	1.5 *U*
14	marsh	SD0020	10/4/2004	0	0	6	23 *UJ*	3.9 *U*	3.6 *U*	3.0 *U*	3.1 *U*	3.3 *U*
16	marsh	SD0007	9/29/2004	0	0	6	6.9 *UJ*	1.2 *U*	1.2 *U*	0.91 *U*	0.94 *U*	1.1 *U*
17	marsh	SD0017	10/4/2004	1	0	6	22 *UJ*	3.7 *U*	3.5 *U*	2.9 *U*	2.9 *U*	3.2 *U*
17	marsh	SD0018	10/4/2004	2	0	6	22 *UJ*	3.7 *U*	3.5 *U*	2.9 *U*	3.0 *U*	3.2 *U*
19	marsh	SD0005	9/29/2004	0	0	6	18 *UJ*	3.1 *U*	2.9 *U*	2.4 *U*	2.5 *U*	2.6 *U*
11A	upland	SD0006	9/29/2004	0	0	6	7.6 *J*	1.1 *U*	0.98 *U*	0.81 *U*	0.83 *U*	0.89 *U*
13A	upland	SD0002	9/28/2004	0	0	6	28 *UJ*	0.97 *U*	0.91 *U*	0.75 *U*	0.77 *U*	0.83 *U*
18A	upland	SD0004	9/28/2004	0	0	6	120 *UJ*	1.1 *U*	0.94 *U*	0.77 *U*	0.80 *U*	0.86 *U*
22	upland	SD0003	9/28/2004	0	0	6	130 *UJ*	1.1 *U*	0.99 *U*	0.81 *U*	0.84 *U*	0.90 *U*
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	7.2 *UJ*	1.3 *U*	1.2 *U*	0.96 *U*	0.99 *U*	1.1 *U*
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	7.9 *UJ*	1.4 *U*	1.3 *U*	1.1 *U*	1.1 *U*	1.2 *U*
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	9.8 *UJ*	1.7 *U*	1.6 *U*	1.3 *U*	1.4 *U*	1.5 *U*

Table C-1. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	1,3-Dichloro-benzene (µg/kg dry)	1,4-Dichloro-benzene (µg/kg dry)	2-Butanone (µg/kg dry)	2-Hexanone (µg/kg dry)	4-Methyl-2-pentanone (µg/kg dry)	Acetone (µg/kg dry)
River												
1	river	SD0025	10/5/2004	0	0	6	1.1 *U*	1.3 *U*	13 *UR*	9.4 *U*	8.5 *U*	21 *U*
2	river	SD0024	10/5/2004	0	0	6	1.5 *U*	1.7 *U*	17 *UR*	13 *U*	12 *U*	30 *U*
3	river	SD0023	10/5/2004	0	0	6	2.9 *U*	3.4 *U*	35 *UR*	25 *U*	23 *U*	87 *J*
4	river	SD0022	10/5/2004	0	0	6	2.1 *U*	2.4 *U*	25 *UR*	18 *U*	17 *U*	30 *U*
5	river	SD0008	10/1/2004	0	0	6	1.3 *U*	1.5 *U*	15 *UR*	11 *U*	9.5 *U*	18 *U*
6	river	SD0009	10/1/2004	0	0	6	1.2 *U*	1.4 *U*	16 *J*	10 *U*	9.0 *U*	88
7R	river	SD0034	10/6/2004	0	0	6	0.96 *U*	1.2 *U*	12 *UR*	8.3 *U*	7.5 *U*	14 *U*
8	river	SD0010	10/1/2004	1	0	6	11 *J*	55 *J*	16 *UR*	12 *U*	11 *U*	26,000 *J*
8	river	SD0011	10/1/2004	2	0	6	1.7 *J*	9.2 *J*	17 *UR*	13 *U*	12 *U*	5,600 *J*
9	river	SD0012	10/1/2004	0	0	6	1.3 *U*	1.4 *U*	15 *UR*	11 *U*	9.4 *U*	17 *U*
10	river	SD0033	10/6/2004	0	0	6	1.2 *U*	1.4 *U*	14 *UR*	11 *U*	9.1 *U*	17 *U*
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	1.5 *U*	1.7 *U*	17 *UR*	13 *U*	12 *U*	52 *U*
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	1.6 *U*	1.8 *U*	19 *UR*	14 *U*	13 *U*	150
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	2.5 *U*	2.9 *U*	30 *UR*	22 *U*	20 *U*	36 *U*
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	1.1 *U*	1.3 *U*	13 *UR*	9.3 *U*	8.4 *U*	54 *U*
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	0.95 *U*	1.1 *U*	12 *UR*	8.2 *U*	7.4 *U*	14 *U*
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	3.0 *U*	3.4 *U*	35 *UR*	25 *U*	23 *U*	81 *U*
13	marsh	SD0019	10/4/2004	0	0	6	1.5 *U*	1.7 *U*	18 *UR*	13 *U*	12 *U*	21 *U*
14	marsh	SD0020	10/4/2004	0	0	6	3.3 *U*	3.8 *U*	39 *UR*	28 *U*	25 *U*	51 *U*
16	marsh	SD0007	9/29/2004	0	0	6	1.0 *U*	1.2 *U*	12 *UR*	8.6 *U*	7.7 *U*	14 *U*
17	marsh	SD0017	10/4/2004	1	0	6	3.1 *U*	3.6 *U*	37 *UR*	27 *U*	24 *U*	44 *U*
17	marsh	SD0018	10/4/2004	2	0	6	3.1 *U*	3.6 *U*	37 *UR*	27 *U*	24 *U*	44 *U*
19	marsh	SD0005	9/29/2004	0	0	6	2.6 *U*	3.0 *U*	31 *UR*	23 *U*	20 *U*	37 *U*
11A	upland	SD0006	9/29/2004	0	0	6	0.88 *U*	1.1 *U*	11 *UR*	7.6 *U*	6.8 *U*	13 *U*
13A	upland	SD0002	9/28/2004	0	0	6	0.81 *U*	0.94 *U*	9.6 *UR*	7.0 *U*	6.3 *U*	12 *U*
18A	upland	SD0004	9/28/2004	0	0	6	0.84 *U*	0.97 *U*	10 *UR*	7.3 *U*	6.6 *U*	12 *U*
22	upland	SD0003	9/28/2004	0	0	6	0.89 *U*	1.1 *U*	11 *UR*	7.6 *U*	6.9 *U*	13 *U*
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	1.1 *U*	1.3 *U*	13 *UR*	9.0 *U*	8.1 *U*	15 *U*
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	1.2 *U*	1.4 *U*	14 *UR*	9.8 *U*	8.9 *U*	17 *U*
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	1.5 *U*	1.7 *U*	17 *UR*	13 *U*	11 *U*	20 *U*

Table C-1. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	Benzene (µg/kg dry)	Bromodichloro-methane (µg/kg dry)	Bromomethane (µg/kg dry)	Carbon Disulfide (µg/kg dry)	Carbon Tetrachloride (µg/kg dry)	Trichlorofluoro-methane (µg/kg dry)
River												
1	river	SD0025	10/5/2004	0	0	6	1.3 *U*	0.82 *U*	1.3 *U*	2.3 *U*	0.92 *U*	1.2 *U*
2	river	SD0024	10/5/2004	0	0	6	1.6 *U*	1.1 *U*	1.7 *U*	3.1 *U*	1.3 *U*	1.5 *U*
3	river	SD0023	10/5/2004	0	0	6	3.2 *U*	2.2 *U*	3.3 *U*	8.9 *J*	2.5 *U*	3.0 *U*
4	river	SD0022	10/5/2004	0	0	6	2.4 *U*	1.6 *U*	2.4 *U*	5.7 *J*	1.8 *U*	2.2 *U*
5	river	SD0008	10/1/2004	0	0	6	1.4 *U*	0.91 *U*	1.4 *U*	2.6 *U*	1.1 *U*	1.3 *U*
6	river	SD0009	10/1/2004	0	0	6	1.3 *U*	0.87 *U*	1.4 *U*	3.8 *J*	0.98 *U*	1.2 *U*
7R	river	SD0034	10/6/2004	0	0	6	1.1 *U*	0.72 *U*	1.1 *U*	2.1 *U*	0.81 *U*	0.99 *U*
8	river	SD0010	10/1/2004	1	0	6	1.5 *U*	1.0 *U*	1.5 *U*	4.0 *J*	1.2 *U*	1.4 *U*
8	river	SD0011	10/1/2004	2	0	6	1.6 *U*	1.1 *U*	1.7 *U*	3.1 *UJ*	1.3 *U*	1.5 *U*
9	river	SD0012	10/1/2004	0	0	6	1.4 *U*	0.90 *U*	1.4 *U*	2.6 *U*	1.1 *U*	1.3 *U*
10	river	SD0033	10/6/2004	0	0	6	1.4 *U*	0.88 *U*	1.4 *U*	2.5 *U*	1.0 *U*	1.3 *U*
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	1.6 *U*	1.1 *U*	1.7 *U*	4.8 *J*	1.3 *U*	1.5 *U*
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	1.8 *U*	1.2 *U*	1.8 *U*	3.3 *U*	1.4 *U*	1.7 *U*
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	2.8 *U*	1.9 *U*	2.9 *U*	5.3 *U*	2.2 *U*	2.6 *U*
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	1.3 *U*	0.81 *U*	1.3 *U*	2.3 *U*	0.92 *U*	1.2 *U*
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	1.1 *U*	0.71 *U*	1.1 *U*	2.0 *U*	0.80 *U*	0.97 *U*
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	3.3 *U*	2.2 *U*	3.3 *U*	6.2 *U*	2.5 *U*	3.0 *U*
13	marsh	SD0019	10/4/2004	0	0	6	1.7 *U*	1.1 *U*	1.7 *U*	3.1 *U*	1.3 *U*	1.5 *U*
14	marsh	SD0020	10/4/2004	0	0	6	3.6 *U*	2.5 *U*	3.7 *U*	6.9 *U*	2.8 *U*	3.4 *U*
16	marsh	SD0007	9/29/2004	0	0	6	1.2 *U*	0.75 *U*	1.2 *U*	2.1 *U*	0.84 *U*	1.1 *U*
17	marsh	SD0017	10/4/2004	1	0	6	3.5 *U*	2.3 *U*	3.5 *U*	6.5 *U*	2.6 *U*	3.2 *U*
17	marsh	SD0018	10/4/2004	2	0	6	3.5 *U*	2.3 *U*	3.5 *U*	6.5 *U*	2.6 *U*	3.2 *U*
19	marsh	SD0005	9/29/2004	0	0	6	2.9 *U*	2.0 *U*	2.9 *U*	5.5 *U*	2.2 *U*	2.7 *U*
11A	upland	SD0006	9/29/2004	0	0	6	0.98 *U*	0.66 *U*	0.99 *U*	1.9 *U*	0.74 *U*	0.91 *U*
13A	upland	SD0002	9/28/2004	0	0	6	0.91 *U*	0.61 *U*	0.92 *U*	1.8 *U*	0.69 *U*	0.84 *U*
18A	upland	SD0004	9/28/2004	0	0	6	0.94 *U*	0.63 *U*	0.95 *U*	1.8 *U*	0.71 *U*	0.87 *U*
22	upland	SD0003	9/28/2004	0	0	6	0.99 *U*	0.66 *U*	1.0 *U*	1.9 *U*	0.75 *U*	0.91 *U*
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	1.2 *U*	0.78 *U*	1.2 *U*	2.3 *U*	0.89 *U*	1.1 *U*
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	1.3 *U*	0.86 *U*	1.3 *U*	2.5 *U*	0.97 *U*	1.2 *U*
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	1.6 *U*	1.1 *U*	1.6 *U*	3.0 *U*	1.2 *U*	1.5 *U*

Table C-1. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	Trichlorotrifluoro-ethane (µg/kg dry)	Chlorobenzene (µg/kg dry)	Chloroethane (µg/kg dry)	Chloroform (µg/kg dry)	Chloromethane (µg/kg dry)	*cis*-1,2-Dichloroethene (µg/kg dry)
River												
1	river	SD0025	10/5/2004	0	0	6	1.2 *U*	1.1 *U*	1.2 *U*	0.88 *U*	1.6 *U*	1.3 *U*
2	river	SD0024	10/5/2004	0	0	6	1.5 *U*	1.5 *U*	1.6 *U*	1.2 *U*	2.0 *U*	1.7 *U*
3	river	SD0023	10/5/2004	0	0	6	3.0 *U*	2.9 *U*	3.2 *U*	2.4 *U*	4.1 *U*	3.4 *U*
4	river	SD0022	10/5/2004	0	0	6	2.2 *U*	2.1 *U*	2.3 *U*	1.7 *U*	2.9 *U*	2.5 *U*
5	river	SD0008	10/1/2004	0	0	6	1.3 *U*	1.2 *U*	1.4 *U*	0.98 *U*	1.7 *U*	1.5 *U*
6	river	SD0009	10/1/2004	0	0	6	1.3 *U*	1.2 *U*	1.3 *U*	0.93 *U*	1.7 *U*	1.4 *U*
7R	river	SD0034	10/6/2004	0	0	6	1.0 *U*	0.95 *U*	1.1 *U*	0.77 *U*	1.4 *U*	1.2 *U*
8	river	SD0010	10/1/2004	1	0	6	1.4 *U*	1.4 *U*	1.5 *U*	1.1 *U*	1.9 *U*	1.6 *U*
8	river	SD0011	10/1/2004	2	0	6	1.5 *U*	1.5 *U*	1.6 *U*	1.2 *U*	2.0 *U*	1.7 *U*
9	river	SD0012	10/1/2004	0	0	6	1.3 *U*	1.2 *U*	1.4 *U*	0.97 *U*	1.7 *U*	1.5 *U*
10	river	SD0033	10/6/2004	0	0	6	1.3 *U*	1.2 *U*	1.3 *U*	0.95 *U*	1.7 *U*	1.4 *U*
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	1.5 *U*	1.5 *U*	1.6 *U*	1.2 *U*	2.0 *U*	1.7 *U*
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	1.7 *U*	1.6 *U*	1.8 *U*	1.3 *U*	2.2 *U*	1.9 *U*
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	2.6 *U*	2.5 *U*	2.8 *U*	2.0 *U*	3.5 *U*	3.0 *U*
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	1.2 *U*	1.1 *U*	1.2 *U*	0.87 *U*	1.6 *U*	1.3 *U*
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	0.99 *U*	0.93 *U*	1.1 *U*	0.76 *U*	1.4 *U*	1.2 *U*
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	3.1 *U*	2.9 *U*	3.2 *U*	2.4 *U*	4.1 *U*	3.5 *U*
13	marsh	SD0019	10/4/2004	0	0	6	1.6 *U*	1.5 *U*	1.7 *U*	1.2 *U*	2.1 *U*	1.8 *U*
14	marsh	SD0020	10/4/2004	0	0	6	3.4 *U*	3.2 *U*	3.6 *U*	2.6 *U*	4.5 *U*	3.8 *U*
16	marsh	SD0007	9/29/2004	0	0	6	1.1 *U*	0.98 *U*	1.1 *U*	0.80 *U*	1.4 *U*	1.2 *U*
17	marsh	SD0017	10/4/2004	1	0	6	3.2 *U*	3.1 *U*	3.4 *U*	2.5 *U*	4.3 *U*	3.6 *U*
17	marsh	SD0018	10/4/2004	2	0	6	3.3 *U*	3.1 *U*	3.4 *U*	2.5 *U*	4.3 *U*	3.6 *U*
19	marsh	SD0005	9/29/2004	0	0	6	2.7 *U*	2.6 *U*	2.9 *U*	2.1 *U*	3.6 *U*	3.0 *U*
11A	upland	SD0006	9/29/2004	0	0	6	0.92 *U*	0.87 *U*	0.97 *U*	0.71 *U*	1.3 *U*	1.1 *U*
13A	upland	SD0002	9/28/2004	0	0	6	0.85 *U*	0.80 *U*	0.89 *U*	0.65 *U*	1.2 *U*	0.95 *U*
18A	upland	SD0004	9/28/2004	0	0	6	0.88 *U*	0.83 *U*	0.93 *U*	0.68 *U*	1.2 *U*	0.99 *U*
22	upland	SD0003	9/28/2004	0	0	6	0.92 *U*	0.87 *U*	0.97 *U*	18	1.3 *U*	1.1 *U*
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	1.1 *U*	1.1 *U*	1.2 *U*	0.84 *U*	1.5 *U*	1.3 *U*
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	1.2 *U*	1.2 *U*	1.3 *U*	0.92 *U*	1.6 *U*	1.4 *U*
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	1.5 *U*	1.4 *U*	1.6 *U*	1.2 *U*	2.0 *U*	1.7 *U*

Table C-1. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	*cis*-1,3-Dichloro-propene (µg/kg dry)	Cyclohexane (µg/kg dry)	Dichloro-difluoromethane (µg/kg dry)	Methylene Chloride (µg/kg dry)	Ethylbenzene (µg/kg dry)	Isopropyl-benzene (µg/kg dry)
River												
1	river	SD0025	10/5/2004	0	0	6	1.2 *U*	1.1 *U*	1.1 *U*	5.4 *U*	0.88 *U*	1.1 *U*
2	river	SD0024	10/5/2004	0	0	6	1.6 *U*	1.4 *U*	1.5 *U*	6.7 *U*	1.2 *U*	1.4 *U*
3	river	SD0023	10/5/2004	0	0	6	3.1 *U*	2.8 *U*	2.9 *U*	4.6 *U*	2.4 *U*	2.8 *U*
4	river	SD0022	10/5/2004	0	0	6	2.3 *U*	2.0 *U*	2.1 *U*	3.2 *U*	1.7 *U*	2.0 *U*
5	river	SD0008	10/1/2004	0	0	6	1.4 *U*	1.2 *U*	1.2 *U*	5.9 *U*	0.98 *U*	1.2 *U*
6	river	SD0009	10/1/2004	0	0	6	1.3 *U*	1.1 *U*	1.2 *U*	4.1 *U*	0.93 *U*	1.2 *U*
7R	river	SD0034	10/6/2004	0	0	6	1.1 *U*	0.91 *U*	0.95 *U*	6.5 *U*	0.77 *U*	0.92 *U*
8	river	SD0010	10/1/2004	1	0	6	1.5 *U*	1.3 *U*	1.4 *U*	7.2 *U*	1.1 *U*	1.3 *U*
8	river	SD0011	10/1/2004	2	0	6	1.6 *U*	1.4 *U*	1.5 *U*	4.0 *U*	1.2 *U*	1.4 *U*
9	river	SD0012	10/1/2004	0	0	6	1.3 *U*	1.2 *U*	1.2 *U*	4.4 *U*	0.97 *U*	1.2 *U*
10	river	SD0033	10/6/2004	0	0	6	1.3 *U*	1.2 *U*	1.2 *U*	8.2 *U*	0.95 *U*	1.2 *U*
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	1.6 *U*	1.4 *U*	1.5 *U*	7.3 *U*	1.2 *U*	1.4 *U*
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	1.7 *U*	1.5 *U*	1.6 *U*	4.1 *U*	1.3 *U*	1.5 *U*
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	2.7 *U*	2.4 *U*	2.5 *U*	5.7 *U*	2.0 *U*	2.4 *U*
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	1.2 *U*	1.1 *U*	1.1 *U*	6.7 *U*	0.87 *U*	1.1 *U*
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	1.1 *U*	0.89 *U*	0.93 *U*	4.7 *U*	0.76 *U*	0.91 *U*
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	3.2 *U*	2.8 *U*	2.9 *U*	5.9 *U*	2.4 *U*	2.8 *U*
13	marsh	SD0019	10/4/2004	0	0	6	1.6 *U*	1.4 *U*	1.5 *U*	3.1 *U*	1.2 *U*	1.4 *U*
14	marsh	SD0020	10/4/2004	0	0	6	3.5 *U*	3.1 *U*	3.2 *U*	4.4 *U*	2.6 *U*	3.1 *U*
16	marsh	SD0007	9/29/2004	0	0	6	1.1 *U*	0.94 *U*	0.98 *U*	3.0 *U*	0.80 *U*	0.95 *U*
17	marsh	SD0017	10/4/2004	1	0	6	3.3 *U*	2.9 *U*	3.1 *U*	7.2 *U*	2.5 *U*	3.0 *U*
17	marsh	SD0018	10/4/2004	2	0	6	3.3 *U*	3.0 *U*	3.1 *U*	6.8 *U*	2.5 *U*	3.0 *U*
19	marsh	SD0005	9/29/2004	0	0	6	2.8 *U*	2.5 *U*	2.6 *U*	6.4 *U*	18 *J*	2.5 *U*
11A	upland	SD0006	9/29/2004	0	0	6	0.94 *U*	0.83 *U*	0.87 *U*	5.8 *U*	0.71 *U*	0.84 *U*
13A	upland	SD0002	9/28/2004	0	0	6	0.87 *U*	0.77 *U*	0.80 *U*	3.1 *U*	0.65 *U*	0.78 *U*
18A	upland	SD0004	9/28/2004	0	0	6	0.90 *U*	0.80 *U*	0.83 *U*	3.2 *U*	0.68 *U*	0.81 *U*
22	upland	SD0003	9/28/2004	0	0	6	0.95 *U*	0.84 *U*	0.87 *U*	5.8 *U*	0.71 *U*	0.85 *U*
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	1.2 *U*	0.99 *U*	1.1 *U*	1.5 *U*	0.84 *U*	1.0 *U*
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	1.3 *U*	1.1 *U*	1.2 *U*	3.1 *U*	0.92 *U*	1.1 *U*
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	1.6 *U*	1.4 *U*	1.4 *U*	3.5 *U*	1.2 *U*	1.4 *U*

Table C-1. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	Methyl Acetate (µg/kg dry)	Methyl-*tert*-butyl ether (µg/kg dry)	Methylcyclo-hexane (µg/kg dry)	Styrene (µg/kg dry)	Tetrachloro-ethene (µg/kg dry)	Toluene (µg/kg dry)
River												
1	river	SD0025	10/5/2004	0	0	6	1.2 *U*	0.99 *U*	1.1 *U*	1.2 *U*	0.48 *U*	1.3 *U*
2	river	SD0024	10/5/2004	0	0	6	1.5 *U*	1.3 *U*	1.5 *U*	1.5 *U*	0.63 *U*	1.7 *U*
3	river	SD0023	10/5/2004	0	0	6	3.0 *U*	2.6 *U*	2.9 *U*	3.0 *U*	1.3 *U*	3.5 *U*
4	river	SD0022	10/5/2004	0	0	6	2.2 *U*	1.9 *U*	2.1 *U*	2.2 *U*	0.91 *U*	2.5 *U*
5	river	SD0008	10/1/2004	0	0	6	1.3 *U*	1.1 *U*	1.3 *U*	1.3 *U*	0.54 *U*	1.5 *U*
6	river	SD0009	10/1/2004	0	0	6	1.2 *U*	1.1 *U*	1.2 *U*	1.2 *U*	0.51 *U*	1.4 *U*
7R	river	SD0034	10/6/2004	0	0	6	0.99 *U*	0.87 *U*	0.96 *U*	0.99 *U*	0.42 *U*	1.2 *U*
8	river	SD0010	10/1/2004	1	0	6	1.4 *U*	1.2 *U*	1.4 *U*	1.4 *U*	0.58 *U*	1.6 *U*
8	river	SD0011	10/1/2004	2	0	6	1.5 *U*	1.3 *U*	1.5 *U*	1.5 *U*	0.63 *U*	1.7 *U*
9	river	SD0012	10/1/2004	0	0	6	1.3 *U*	1.1 *U*	1.3 *U*	1.3 *U*	0.53 *U*	1.5 *U*
10	river	SD0033	10/6/2004	0	0	6	1.3 *U*	1.1 *U*	1.2 *U*	1.3 *U*	0.52 *U*	1.4 *U*
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	1.5 *U*	1.3 *U*	1.5 *U*	1.5 *U*	0.63 *U*	1.7 *U*
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	1.7 *U*	1.5 *U*	1.6 *U*	1.7 *U*	0.68 *U*	1.9 *U*
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	2.6 *U*	2.3 *U*	2.5 *U*	2.6 *U*	1.1 *U*	3.0 *U*
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	1.2 *U*	0.98 *U*	1.1 *U*	1.2 *U*	0.48 *U*	1.3 *U*
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	0.97 *U*	0.85 *U*	0.95 *U*	0.97 *U*	0.42 *U*	1.2 *U*
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	3.0 *U*	2.7 *U*	3.0 *U*	3.0 *U*	1.3 *U*	3.5 *U*
13	marsh	SD0019	10/4/2004	0	0	6	1.5 *U*	1.4 *U*	1.5 *U*	1.5 *U*	0.64 *U*	1.8 *U*
14	marsh	SD0020	10/4/2004	0	0	6	3.4 *U*	3.0 *U*	3.3 *U*	3.4 *U*	1.5 *U*	3.9 *U*
16	marsh	SD0007	9/29/2004	0	0	6	1.1 *U*	0.90 *U*	1.0 *U*	1.1 *U*	0.44 *U*	1.2 *U*
17	marsh	SD0017	10/4/2004	1	0	6	3.2 *U*	2.8 *U*	3.1 *U*	3.2 *U*	1.4 *U*	3.7 *U*
17	marsh	SD0018	10/4/2004	2	0	6	3.2 *U*	2.8 *U*	3.1 *U*	3.2 *U*	1.4 *U*	3.7 *U*
19	marsh	SD0005	9/29/2004	0	0	6	2.7 *U*	2.4 *U*	2.6 *U*	2.7 *U*	1.2 *U*	3.1 *U*
11A	upland	SD0006	9/29/2004	0	0	6	0.91 *U*	0.79 *U*	0.88 *U*	0.91 *U*	0.83 *J*	1.1 *U*
13A	upland	SD0002	9/28/2004	0	0	6	0.84 *U*	0.73 *U*	0.81 *U*	0.84 *U*	0.36 *U*	0.96 *U*
18A	upland	SD0004	9/28/2004	0	0	6	0.87 *U*	0.76 *U*	0.84 *U*	9.5	0.37 *U*	1.0 *U*
22	upland	SD0003	9/28/2004	0	0	6	0.91 *U*	0.80 *U*	0.89 *U*	0.91 *U*	1.1 *J*	1.1 *U*
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	1.1 *U*	0.94 *U*	1.1 *U*	1.1 *U*	0.46 *U*	1.3 *U*
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	1.2 *U*	1.1 *U*	1.2 *U*	1.2 *U*	0.50 *U*	1.4 *U*
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	1.5 *U*	1.3 *U*	1.5 *U*	1.5 *U*	0.62 *U*	1.7 *U*

Table C-1. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	*trans* -1,2-Dichloroethene (µg/kg dry)	*trans* -1,3-Dichloro-propene (µg/kg dry)	Bromoform (µg/kg dry)	Trichloroethene (µg/kg dry)	Vinyl Chloride (µg/kg dry)
River											
1	river	SD0025	10/5/2004	0	0	6	1.2 *U*	0.92 *U*	1.0 *U*	0.43 *U*	0.95 *U*
2	river	SD0024	10/5/2004	0	0	6	1.5 *U*	1.3 *U*	1.4 *U*	0.57 *U*	1.3 *U*
3	river	SD0023	10/5/2004	0	0	6	3.0 *U*	2.5 *U*	2.7 *U*	1.2 *U*	2.6 *U*
4	river	SD0022	10/5/2004	0	0	6	2.2 *U*	1.8 *U*	1.9 *U*	0.82 *U*	1.9 *U*
5	river	SD0008	10/1/2004	0	0	6	1.3 *U*	1.1 *U*	1.2 *U*	0.48 *U*	1.1 *U*
6	river	SD0009	10/1/2004	0	0	6	1.2 *U*	0.98 *U*	1.1 *U*	0.46 *U*	1.1 *U*
7R	river	SD0034	10/6/2004	0	0	6	0.99 *U*	0.81 *U*	0.88 *U*	0.56 *J*	0.84 *U*
8	river	SD0010	10/1/2004	1	0	6	1.4 *U*	1.2 *U*	1.3 *U*	0.53 *U*	1.2 *U*
8	river	SD0011	10/1/2004	2	0	6	1.5 *U*	1.3 *U*	1.4 *U*	0.57 *U*	1.3 *U*
9	river	SD0012	10/1/2004	0	0	6	1.3 *U*	1.1 *U*	1.2 *U*	0.48 *U*	1.1 *U*
10	river	SD0033	10/6/2004	0	0	6	1.3 *U*	1.0 *U*	1.1 *U*	0.47 *U*	1.1 *U*
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	1.5 *U*	1.3 *U*	1.4 *U*	0.57 *U*	1.3 *U*
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	1.7 *U*	1.4 *U*	1.5 *U*	0.62 *U*	1.4 *U*
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	2.6 *U*	2.2 *U*	2.3 *U*	0.99 *U*	2.2 *U*
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	1.2 *U*	0.92 *U*	0.99 *U*	0.43 *U*	0.95 *U*
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	0.97 *U*	0.80 *U*	0.87 *U*	0.38 *U*	0.83 *U*
Marsh											
12	marsh	SD0016	10/4/2004	0	0	6	3.0 *U*	2.5 *U*	2.7 *U*	1.2 *U*	2.6 *U*
13	marsh	SD0019	10/4/2004	0	0	6	1.5 *U*	1.3 *U*	1.4 *U*	0.58 *U*	1.3 *U*
14	marsh	SD0020	10/4/2004	0	0	6	3.4 *U*	2.8 *U*	3.0 *U*	1.3 *U*	2.9 *U*
16	marsh	SD0007	9/29/2004	0	0	6	1.1 *U*	0.84 *U*	0.91 *U*	0.40 *U*	0.87 *U*
17	marsh	SD0017	10/4/2004	1	0	6	3.2 *U*	2.6 *U*	2.9 *U*	1.3 *U*	2.7 *U*
17	marsh	SD0018	10/4/2004	2	0	6	3.2 *U*	2.6 *U*	2.9 *U*	1.3 *U*	2.7 *U*
19	marsh	SD0005	9/29/2004	0	0	6	2.7 *U*	2.2 *U*	2.4 *U*	1.1 *U*	2.3 *U*
11A	upland	SD0006	9/29/2004	0	0	6	0.91 *U*	0.74 *U*	0.81 *U*	1.8 *J*	0.77 *U*
13A	upland	SD0002	9/28/2004	0	0	6	0.84 *U*	0.69 *U*	0.75 *U*	0.32 *U*	0.71 *U*
18A	upland	SD0004	9/28/2004	0	0	6	0.87 *U*	0.71 *U*	0.77 *U*	0.88 *J*	0.74 *U*
22	upland	SD0003	9/28/2004	0	0	6	0.91 *U*	0.75 *U*	0.81 *U*	4.1 *J*	0.78 *U*
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	1.1 *U*	0.89 *U*	0.96 *U*	0.42 *U*	0.92 *U*
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	1.2 *U*	0.97 *U*	1.1 *U*	0.45 *U*	1.0 *U*
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	1.5 *U*	1.2 *U*	1.3 *U*	0.56 *U*	1.3 *U*

Note: Rmarsh - marsh reference zone
Rriver - river reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table C-2. Semivolatile organic compound results for river and marsh sediment

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	2,4,5-Trichlorophenol (µg/kg dry)	2,4,6-Trichlorophenol (µg/kg dry)	2,4-Dichlorophenol (µg/kg dry)	2,4-Dimethylphenol (µg/kg dry)	2,4-Dinitrophenol (µg/kg dry)	2,4-Dinitrotoluene (µg/kg dry)
River												
1	river	SD0025	10/5/2004	0	0	6	9.2 *U*	5.6 *U*	5.6 *U*	17 *UJ*	120 *U*	8.6 *U*
2	river	SD0024	10/5/2004	0	0	6	13 *U*	7.3 *U*	7.3 *U*	23 *UJ*	150 *U*	17 *J*
3	river	SD0023	10/5/2004	0	0	6	61 *U*	37 *U*	37 *U*	120 *UJ*	730 *U*	57 *U*
4	river	SD0022	10/5/2004	0	0	6	44 *U*	27 *U*	27 *U*	81 *UJ*	530 *U*	41 *UJ*
5	river	SD0008	10/1/2004	0	0	6	5.2 *U*	3.1 *U*	3.1 *U*	9.5 *UJ*	62 *U*	4.8 *U*
6	river	SD0009	10/1/2004	0	0	6	4.9 *U*	3.0 *U*	3.0 *U*	9.0 *UJ*	59 *U*	4.6 *U*
7R	river	SD0034	10/6/2004	0	0	6	4.1 *U*	2.5 *U*	2.5 *U*	7.5 *UJ*	49 *U*	3.8 *U*
8	river	SD0010	10/1/2004	1	0	6	5.7 *UJ*	3.4 *U*	3.4 *U*	11 *UJ*	68 *U*	5.3 *U*
8	river	SD0011	10/1/2004	2	0	6	20 *J*	7.3 *U*	7.3 *U*	23 *UJ*	150 *U*	12 *U*
9	river	SD0012	10/1/2004	0	0	6	5.1 *U*	3.1 *U*	3.1 *U*	9.4 *UJ*	62 *U*	4.8 *U*
10	river	SD0033	10/6/2004	0	0	6	5.0 *U*	3.0 *U*	3.0 *U*	9.1 *UJ*	60 *U*	4.7 *U*
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	6.1 *U*	3.7 *U*	3.7 *U*	12 *UJ*	73 *U*	5.7 *U*
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	14 *U*	7.9 *U*	7.9 *U*	25 *UJ*	160 *U*	13 *U*
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	11 *U*	6.4 *U*	6.4 *U*	20 *UJ*	130 *U*	9.9 *U*
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	4.6 *U*	2.8 *U*	2.8 *U*	8.4 *UJ*	55 *U*	4.3 *U*
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	4.0 *U*	2.4 *U*	2.4 *U*	7.4 *UJ*	48 *U*	3.8 *U*
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	13 *U*	7.4 *U*	7.4 *U*	23 *UJ*	150 *U*	12 *U*
13	marsh	SD0019	10/4/2004	0	0	6	6.2 *U*	3.7 *U*	3.7 *U*	12 *UJ*	74 *U*	5.8 *U*
14	marsh	SD0020	10/4/2004	0	0	6	14 *U*	8.2 *U*	8.2 *U*	25 *UJ*	170 *U*	13 *UJ*
16	marsh	SD0007	9/29/2004	0	0	6	4.2 *U*	2.6 *U*	2.6 *U*	7.7 *UJ*	51 *U*	4.0 *U*
17	marsh	SD0017	10/4/2004	1	0	6	13 *U*	7.8 *U*	7.8 *U*	24 *UJ*	160 *U*	13 *U*
17	marsh	SD0018	10/4/2004	2	0	6	13 *U*	7.8 *U*	7.8 *U*	24 *UJ*	160 *U*	13 *U*
19	marsh	SD0005	9/29/2004	0	0	6	11 *U*	6.5 *U*	6.5 *U*	20 *UJ*	130 *U*	11 *UJ*
11A	upland	SD0006	9/29/2004	0	0	6	5.7 *J*	2.3 *U*	2.3 *U*	8.0 *J*	45 *U*	3.5 *U*
13A	upland	SD0002	9/28/2004	0	0	6	18 *U*	11 *U*	11 *U*	32 *UJ*	210 *U*	16 *U*
18A	upland	SD0004	9/28/2004	0	0	6	71 *U*	43 *U*	43 *U*	140 *UJ*	860 *U*	67 *U*
22	upland	SD0003	9/28/2004	0	0	6	75 *U*	45 *U*	45 *U*	140 *UJ*	900 *U*	70 *U*
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	4.5 *U*	2.7 *U*	2.7 *U*	8.1 *UJ*	53 *U*	4.2 *U*
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	4.9 *U*	2.9 *U*	2.9 *U*	8.9 *UJ*	58 *U*	4.5 *U*
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	6.0 *U*	3.6 *U*	3.6 *U*	11 *UJ*	72 *U*	5.6 *U*

Table C-2. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	2,6-Dinitrotoluene (µg/kg dry)	2-Chloro-naphthalene (µg/kg dry)	2-Chlorophenol (µg/kg dry)	2-Methyl-4,6-dinitrophenol (µg/kg dry)	2-Methyl-naphthalene (µg/kg dry)	2-Methylphenol (µg/kg dry)
River												
1	river	SD0025	10/5/2004	0	0	6	8.6 *U*	12 *U*	5.3 *U*	5.3 *U*	4.6 *J*	11 *U*
2	river	SD0024	10/5/2004	0	0	6	12 *U*	15 *U*	6.9 *U*	6.9 *U*	26	14 *U*
3	river	SD0023	10/5/2004	0	0	6	57 *U*	73 *U*	35 *U*	35 *U*	33 *J*	69 *U*
4	river	SD0022	10/5/2004	0	0	6	41 *UJ*	53 *UJ*	25 *U*	25 *U*	33 *J*	50 *U*
5	river	SD0008	10/1/2004	0	0	6	4.8 *U*	6.2 *U*	3.0 *U*	3.0 *U*	4.9 *J*	5.9 *U*
6	river	SD0009	10/1/2004	0	0	6	4.6 *U*	5.9 *U*	2.8 *U*	2.8 *U*	6.5 *J*	5.6 *U*
7R	river	SD0034	10/6/2004	0	0	6	3.8 *U*	4.9 *U*	2.3 *U*	2.3 *U*	1.7 *U*	4.6 *U*
8	river	SD0010	10/1/2004	1	0	6	5.3 *U*	6.8 *U*	3.2 *U*	3.2 *U*	11	6.4 *U*
8	river	SD0011	10/1/2004	2	0	6	12 *U*	15 *U*	6.9 *U*	6.9 *U*	8.8 *J*	14 *U*
9	river	SD0012	10/1/2004	0	0	6	4.8 *U*	6.2 *U*	2.9 *U*	2.9 *U*	3.5 *J*	5.8 *U*
10	river	SD0033	10/6/2004	0	0	6	4.7 *U*	6.0 *U*	2.9 *U*	2.9 *U*	2.0 *U*	5.7 *U*
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	5.7 *U*	7.3 *U*	3.5 *U*	3.5 *U*	10	6.9 *U*
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	13 *U*	16 *U*	7.5 *U*	7.5 *U*	26	15 *U*
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	9.9 *U*	13 *U*	6.0 *U*	6.0 *U*	8.3 *J*	12 *U*
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	4.3 *U*	5.5 *U*	2.6 *U*	2.6 *U*	4.6 *J*	5.2 *U*
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	3.8 *U*	4.8 *U*	2.3 *U*	2.3 *U*	1.6 *U*	4.6 *U*
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	12 *U*	15 *U*	7.0 *U*	7.0 *U*	16 *J*	14 *U*
13	marsh	SD0019	10/4/2004	0	0	6	5.8 *U*	7.4 *U*	3.5 *U*	3.5 *U*	8.1 *J*	7.0 *U*
14	marsh	SD0020	10/4/2004	0	0	6	13 *UJ*	17 *UJ*	7.8 *U*	7.8 *U*	13 *J*	16 *U*
16	marsh	SD0007	9/29/2004	0	0	6	4.0 *U*	5.1 *U*	2.4 *U*	2.4 *U*	20	4.8 *U*
17	marsh	SD0017	10/4/2004	1	0	6	13 *U*	16 *U*	7.4 *U*	7.4 *U*	23 *J*	15 *U*
17	marsh	SD0018	10/4/2004	2	0	6	13 *U*	16 *U*	7.4 *U*	7.4 *U*	7.1 *J*	15 *U*
19	marsh	SD0005	9/29/2004	0	0	6	11 *UJ*	13 *UJ*	6.2 *U*	6.2 *U*	4.4 *UJ*	13 *U*
11A	upland	SD0006	9/29/2004	0	0	6	3.5 *U*	4.5 *U*	2.1 *U*	2.1 *U*	9.6	29
13A	upland	SD0002	9/28/2004	0	0	6	16 *U*	21 *U*	9.7 *U*	9.7 *U*	6.9 *U*	20 *U*
18A	upland	SD0004	9/28/2004	0	0	6	67 *U*	86 *U*	41 *U*	41 *U*	29 *U*	81 *U*
22	upland	SD0003	9/28/2004	0	0	6	70 *U*	90 *U*	43 *U*	43 *U*	43 *J*	85 *U*
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	4.2 *U*	5.3 *U*	2.5 *U*	2.5 *U*	6.3	5.0 *U*
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	4.5 *U*	5.8 *U*	2.8 *U*	2.8 *U*	9.1	5.5 *U*
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	5.6 *U*	7.2 *U*	3.4 *U*	3.4 *U*	9.6 *J*	6.8 *U*

Table C-2. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	2-Nitroaniline (µg/kg dry)	2-Nitrophenol (µg/kg dry)	3,3'-Dichloro-benzidine (µg/kg dry)	3-Nitroaniline (µg/kg dry)	4-Bromophenyl ether (µg/kg dry)	4-Chloro-3-methylphenol (µg/kg dry)
River												
1	river	SD0025	10/5/2004	0	0	6	8.3 *U*	8.0 *U*	12 *U*	8.0 *U*	4.3 *U*	6.5 *U*
2	river	SD0024	10/5/2004	0	0	6	11 *U*	11 *U*	15 *U*	11 *U*	5.7 *U*	8.5 *U*
3	river	SD0023	10/5/2004	0	0	6	55 *U*	53 *U*	75 *U*	53 *U*	29 *U*	43 *U*
4	river	SD0022	10/5/2004	0	0	6	40 *UJ*	38 *U*	54 *UJ*	38 *UJ*	21 *UJ*	31 *U*
5	river	SD0008	10/1/2004	0	0	6	4.7 *U*	4.5 *U*	6.4 *U*	4.5 *U*	2.4 *U*	3.6 *U*
6	river	SD0009	10/1/2004	0	0	6	4.4 *U*	4.3 *U*	6.1 *U*	4.3 *U*	2.3 *U*	3.5 *U*
7R	river	SD0034	10/6/2004	0	0	6	3.7 *U*	3.6 *U*	5.0 *U*	3.6 *U*	1.9 *U*	2.9 *U*
8	river	SD0010	10/1/2004	1	0	6	5.1 *U*	4.9 *U*	7.0 *U*	4.9 *U*	2.7 *U*	4.0 *U*
8	river	SD0011	10/1/2004	2	0	6	11 *U*	11 *U*	15 *U*	11 *U*	5.7 *U*	8.5 *U*
9	river	SD0012	10/1/2004	0	0	6	4.6 *U*	4.5 *U*	6.3 *U*	4.5 *U*	2.4 *U*	3.6 *U*
10	river	SD0033	10/6/2004	0	0	6	4.5 *U*	4.3 *U*	6.2 *U*	4.3 *U*	2.4 *U*	3.5 *U*
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	5.5 *U*	5.3 *U*	7.5 *U*	5.3 *U*	2.9 *U*	4.3 *U*
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	12 *U*	12 *U*	17 *U*	12 *U*	6.2 *U*	9.3 *U*
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	9.5 *U*	9.2 *U*	13 *U*	9.2 *U*	5.0 *U*	7.4 *U*
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	4.2 *U*	4.0 *U*	5.7 *U*	4.0 *U*	2.2 *U*	3.2 *U*
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	3.6 *U*	3.5 *U*	5.0 *U*	3.5 *U*	1.9 *U*	2.8 *U*
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	12 *U*	11 *U*	16 *U*	11 *U*	5.8 *U*	8.7 *U*
13	marsh	SD0019	10/4/2004	0	0	6	5.6 *U*	5.4 *U*	7.6 *U*	5.4 *U*	2.9 *U*	4.4 *U*
14	marsh	SD0020	10/4/2004	0	0	6	13 *UJ*	12 *U*	17 *UJ*	12 *UJ*	6.4 *UJ*	9.6 *U*
16	marsh	SD0007	9/29/2004	0	0	6	3.8 *U*	3.7 *U*	5.2 *U*	3.7 *U*	2.0 *U*	3.0 *U*
17	marsh	SD0017	10/4/2004	1	0	6	12 *U*	12 *U*	16 *U*	12 *U*	6.1 *U*	9.1 *U*
17	marsh	SD0018	10/4/2004	2	0	6	12 *U*	12 *U*	17 *U*	12 *U*	6.1 *U*	9.1 *U*
19	marsh	SD0005	9/29/2004	0	0	6	9.8 *UJ*	9.4 *U*	14 *UJ*	9.4 *UJ*	5.1 *UJ*	7.6 *U*
11A	upland	SD0006	9/29/2004	0	0	6	3.4 *U*	3.3 *U*	4.6 *U*	3.3 *U*	1.8 *U*	2.6 *U*
13A	upland	SD0002	9/28/2004	0	0	6	16 *U*	15 *U*	22 *U*	15 *U*	8.0 *U*	12 *U*
18A	upland	SD0004	9/28/2004	0	0	6	64 *U*	62 *U*	88 *U*	62 *U*	34 *U*	50 *U*
22	upland	SD0003	9/28/2004	0	0	6	68 *U*	65 *U*	92 *U*	65 *U*	35 *U*	53 *U*
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	4.0 *U*	3.9 *U*	5.5 *U*	3.9 *U*	2.1 *U*	3.1 *U*
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	4.4 *U*	4.2 *U*	6.0 *U*	4.2 *U*	2.3 *U*	3.4 *U*
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	5.4 *U*	5.2 *U*	7.4 *U*	5.2 *U*	2.8 *U*	4.2 *U*

Table C-2. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	4-Chloroaniline (µg/kg dry)	4-Chlorophenyl-phenyl ether (µg/kg dry)	4-Methylphenol (µg/kg dry)	4-Nitroaniline (µg/kg dry)	4-Nitrophenol (µg/kg dry)	Acenaph-thene (µg/kg dry)
River												
1	river	SD0025	10/5/2004	0	0	6	6.5 *U*	6.2 *U*	8.9 *U*	11 *U*	92 *U*	3.6 *J*
2	river	SD0024	10/5/2004	0	0	6	8.5 *U*	8.1 *U*	36	14 *U*	130 *U*	9.6 *J*
3	river	SD0023	10/5/2004	0	0	6	43 *U*	41 *U*	59 *U*	69 *U*	610 *U*	21 *U*
4	river	SD0022	10/5/2004	0	0	6	31 *UJ*	30 *UJ*	43 *U*	50 *UJ*	440 *U*	15 *UJ*
5	river	SD0008	10/1/2004	0	0	6	3.6 *U*	3.5 *U*	7.8 *J*	5.9 *U*	52 *U*	2.7 *J*
6	river	SD0009	10/1/2004	0	0	6	3.5 *U*	3.3 *U*	20	5.6 *U*	49 *U*	3.1 *J*
7R	river	SD0034	10/6/2004	0	0	6	2.9 *U*	2.7 *U*	4.0 *U*	4.6 *U*	41 *U*	1.4 *U*
8	river	SD0010	10/1/2004	1	0	6	4.0 *UJ*	3.8 *U*	7.1 *J*	6.4 *U*	57 *U*	3.1 *J*
8	river	SD0011	10/1/2004	2	0	6	9.5 *J*	8.1 *U*	12 *U*	14 *U*	130 *U*	4.1 *U*
9	river	SD0012	10/1/2004	0	0	6	3.6 *U*	3.4 *U*	6.2 *J*	5.8 *U*	51 *U*	1.7 *U*
10	river	SD0033	10/6/2004	0	0	6	3.5 *U*	3.4 *U*	4.8 *U*	5.7 *U*	50 *U*	1.7 *U*
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	4.3 *U*	4.1 *U*	8.3 *J*	6.9 *U*	61 *U*	3.7 *J*
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	9.3 *U*	8.8 *U*	44	15 *U*	140 *U*	11 *J*
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	7.4 *U*	7.1 *U*	16 *J*	12 *U*	110 *U*	4.6 *J*
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	3.2 *U*	3.1 *U*	7.5 *J*	5.2 *U*	46 *U*	1.8 *J*
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	2.8 *U*	2.7 *U*	3.9 *U*	4.6 *U*	40 *U*	1.4 *U*
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	8.7 *U*	8.2 *U*	24	14 *U*	130 *U*	4.1 *U*
13	marsh	SD0019	10/4/2004	0	0	6	4.4 *U*	4.2 *U*	6.0 *U*	7.0 *U*	62 *U*	2.3 *J*
14	marsh	SD0020	10/4/2004	0	0	6	9.6 *UJ*	9.1 *UJ*	14 *U*	16 *UJ*	140 *U*	4.6 *UJ*
16	marsh	SD0007	9/29/2004	0	0	6	3.0 *U*	2.8 *U*	8.4	4.8 *U*	42 *U*	4.0 *J*
17	marsh	SD0017	10/4/2004	1	0	6	9.1 *U*	8.7 *U*	13 *U*	15 *U*	130 *U*	4.4 *U*
17	marsh	SD0018	10/4/2004	2	0	6	9.1 *U*	8.7 *U*	13 *U*	15 *U*	130 *U*	4.4 *U*
19	marsh	SD0005	9/29/2004	0	0	6	7.6 *UJ*	7.3 *UJ*	11 *U*	13 *UJ*	110 *U*	3.7 *UJ*
11A	upland	SD0006	9/29/2004	0	0	6	2.6 *U*	2.5 *U*	12	4.2 *U*	37 *U*	1.3 *UJ*
13A	upland	SD0002	9/28/2004	0	0	6	12 *U*	12 *U*	17 *U*	20 *U*	180 *U*	5.7 *U*
18A	upland	SD0004	9/28/2004	0	0	6	50 *U*	48 *U*	69 *U*	81 *U*	710 *U*	24 *U*
22	upland	SD0003	9/28/2004	0	0	6	53 *U*	50 *U*	73 *U*	85 *U*	750 *U*	25 *U*
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	3.1 *U*	3.0 *U*	4.3 *U*	5.0 *U*	45 *U*	3.5 *J*
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	3.4 *U*	3.3 *U*	4.7 *U*	5.5 *U*	49 *U*	1.7 *U*
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	4.2 *U*	4.0 *U*	5.8 *U*	6.8 *U*	60 *U*	2.8 *J*

Table C-2. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	Acenaph-thylene (µg/kg dry)	Acetophenone (µg/kg dry)	Anthracene (µg/kg dry)	Atrazine (µg/kg dry)	Benz[a]-anthracene (µg/kg dry)	Benzaldehyde (µg/kg dry)
River												
1	river	SD0025	10/5/2004	0	0	6	22	37 *UJ*	25	6.8 *UJ*	120	27 *UJ*
2	river	SD0024	10/5/2004	0	0	6	45	49 *UJ*	60	8.9 *UJ*	160	36 *UJ*
3	river	SD0023	10/5/2004	0	0	6	50 *J*	250 *UJ*	85 *J*	45 *UJ*	230	180 *UJ*
4	river	SD0022	10/5/2004	0	0	6	33 *J*	180 *UJ*	58 *J*	33 *UJ*	110 *J*	130 *UJ*
5	river	SD0008	10/1/2004	0	0	6	18	21 *UJ*	14	3.8 *UJ*	64	23 *J*
6	river	SD0009	10/1/2004	0	0	6	14	24 *J*	23	3.6 *UJ*	80	32 *J*
7R	river	SD0034	10/6/2004	0	0	6	3.3 *J*	17 *UJ*	3.6 *J*	3.0 *UJ*	15	12 *UJ*
8	river	SD0010	10/1/2004	1	0	6	11	23 *UJ*	18	4.2 *UJ*	44	25 *J*
8	river	SD0011	10/1/2004	2	0	6	11 *J*	49 *UJ*	15 *J*	8.9 *UJ*	48	36 *UJ*
9	river	SD0012	10/1/2004	0	0	6	4.5 *J*	21 *UJ*	8.1 *J*	3.8 *UJ*	18	140 *J*
10	river	SD0033	10/6/2004	0	0	6	2.4 *U*	20 *UJ*	2.4 *U*	3.7 *UJ*	3.2 *J*	15 *UJ*
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	16	25 *UJ*	23	4.5 *UJ*	57	23 *J*
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	40	53 *UJ*	71	9.7 *UJ*	150	39 *UJ*
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	14 *J*	43 *UJ*	23	7.8 *UJ*	66	32 *J*
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	6.9 *J*	19 *UJ*	7.3 *J*	3.4 *UJ*	24	14 *UJ*
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	1.9 *U*	16 *UJ*	1.9 *U*	3.0 *UJ*	7.1	12 *UJ*
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	12 *J*	50 *UJ*	17 *J*	9.1 *UJ*	44	230 *J*
13	marsh	SD0019	10/4/2004	0	0	6	6.9 *J*	25 *UJ*	7.5 *J*	4.6 *UJ*	38	19 *UJ*
14	marsh	SD0020	10/4/2004	0	0	6	7.5 *J*	55 *UJ*	8.6 *J*	10 *UJ*	19 *J*	40 *UJ*
16	marsh	SD0007	9/29/2004	0	0	6	36	23 *J*	28	3.1 *UJ*	120	21 *J*
17	marsh	SD0017	10/4/2004	1	0	6	13 *J*	52 *UJ*	12 *J*	9.5 *UJ*	31	38 *UJ*
17	marsh	SD0018	10/4/2004	2	0	6	11 *J*	52 *UJ*	14 *J*	9.6 *UJ*	45	100 *J*
19	marsh	SD0005	9/29/2004	0	0	6	5.6 *J*	44 *UJ*	6.2 *J*	8.0 *UJ*	25 *J*	32 *UJ*
11A	upland	SD0006	9/29/2004	0	0	6	5.8	22 *J*	12	2.8 *UJ*	21	11 *UJ*
13A	upland	SD0002	9/28/2004	0	0	6	8.9 *J*	94 *J*	16 *J*	13 *UJ*	57 *J*	51 *UJ*
18A	upland	SD0004	9/28/2004	0	0	6	34 *U*	290 *UJ*	34 *U*	53 *UJ*	34 *U*	210 *UJ*
22	upland	SD0003	9/28/2004	0	0	6	35 *U*	300 *UJ*	37 *J*	55 *UJ*	90 *J*	220 *UJ*
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	13	18 *UJ*	15	3.3 *UJ*	66	13 *UJ*
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	3.7 *J*	20 *UJ*	3.8 *J*	3.6 *UJ*	17	15 *UJ*
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	12	24 *UJ*	12	4.4 *UJ*	53	19 *J*

Table C-2. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	Benzo[a]pyrene (µg/kg dry)	Benzo[b]-fluoranthene (µg/kg dry)	Benzo[ghi]-perylene (µg/kg dry)	Benzo[k]-fluoranthene (µg/kg dry)	Biphenyl (µg/kg dry)	Bis[2-chloroethoxy]-methane (µg/kg dry)
River												
1	river	SD0025	10/5/2004	0	0	6	98	190	74	67	15 *UJ*	4.0 *U*
2	river	SD0024	10/5/2004	0	0	6	160	220	130	62	20 *UJ*	5.3 *U*
3	river	SD0023	10/5/2004	0	0	6	250	370	240	110	98 *UJ*	27 *U*
4	river	SD0022	10/5/2004	0	0	6	130 *J*	200 *J*	100 *J*	63 *J*	70 *UJ*	19 *UJ*
5	river	SD0008	10/1/2004	0	0	6	94	100	64	35	8.3 *UJ*	2.3 *U*
6	river	SD0009	10/1/2004	0	0	6	82	120	54	38	7.9 *UJ*	2.2 *U*
7R	river	SD0034	10/6/2004	0	0	6	20	28	16	8.9	6.5 *UJ*	1.8 *U*
8	river	SD0010	10/1/2004	1	0	6	51	82	47	27	9.0 *UJ*	2.5 *U*
8	river	SD0011	10/1/2004	2	0	6	52	87	49	29	20 *UJ*	5.3 *U*
9	river	SD0012	10/1/2004	0	0	6	18	31	15	11	8.2 *UJ*	2.3 *U*
10	river	SD0033	10/6/2004	0	0	6	3.6 *J*	4.2 *U*	3.9 *U*	4.2 *U*	8.0 *UJ*	2.2 *U*
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	60	82	44	28	9.7 *UJ*	2.7 *U*
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	170	230	130	77	22 *UJ*	5.8 *U*
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	87	140	70	45	17 *UJ*	4.6 *U*
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	29	40	25	13	7.4 *UJ*	2.0 *U*
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	11	15	11	4.0 *J*	6.4 *UJ*	1.8 *U*
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	57	89	52	30	20 *UJ*	5.4 *U*
13	marsh	SD0019	10/4/2004	0	0	6	56	70	48	23	9.9 *UJ*	2.7 *U*
14	marsh	SD0020	10/4/2004	0	0	6	25 *J*	44 *J*	25 *J*	12 *UJ*	51 *J*	6.0 *UJ*
16	marsh	SD0007	9/29/2004	0	0	6	150	190	100	70	14 *J*	1.9 *U*
17	marsh	SD0017	10/4/2004	1	0	6	41	63	39	24	44 *J*	5.7 *U*
17	marsh	SD0018	10/4/2004	2	0	6	59	100	57	30	21 *UJ*	5.7 *U*
19	marsh	SD0005	9/29/2004	0	0	6	30 *J*	49 *J*	27 *J*	18 *J*	18 *UJ*	4.7 *UJ*
11A	upland	SD0006	9/29/2004	0	0	6	24	45	28	13	6.0 *UJ*	1.7 *U*
13A	upland	SD0002	9/28/2004	0	0	6	61	180	76	64	28 *UJ*	7.4 *U*
18A	upland	SD0004	9/28/2004	0	0	6	38 *U*	60 *U*	55 *U*	60 *U*	120 *UJ*	31 *U*
22	upland	SD0003	9/28/2004	0	0	6	110 *J*	170	140	63 *U*	120 *UJ*	33 *U*
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	83	110	58	43	7.1 *UJ*	2.0 *U*
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	19	30	15	11	7.8 *UJ*	2.1 *U*
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	69	100	55	32	9.6 *UJ*	2.6 *U*

Table C-2. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	Bis[2-chloroethyl]-ether (µg/kg dry)	Bis[2-chloroisopropyl] ether (µg/kg dry)	Bis[2-ethylhexyl] phthalate (µg/kg dry)	Butylbenzyl phthalate (µg/kg dry)	Caprolactam (µg/kg dry)	Carbazole (µg/kg dry)
River												
1	river	SD0025	10/5/2004	0	0	6	7.4 *U*	3.7 *U*	240 *J*	4.6 *U*	37 *UJ*	10 *J*
2	river	SD0024	10/5/2004	0	0	6	9.7 *U*	4.9 *U*	4,000	6.1 *U*	49 *UJ*	17 *J*
3	river	SD0023	10/5/2004	0	0	6	49 *U*	25 *U*	3,800	31 *U*	250 *UJ*	27 *U*
4	river	SD0022	10/5/2004	0	0	6	35 *UJ*	18 *UJ*	20,000 *J*	74 *J*	180 *UJ*	19 *UJ*
5	river	SD0008	10/1/2004	0	0	6	4.2 *U*	2.1 *U*	19 *U*	2.6 *U*	21 *UJ*	2.6 *J*
6	river	SD0009	10/1/2004	0	0	6	4.0 *U*	2.0 *U*	68 *J*	2.5 *U*	20 *UJ*	5.7 *J*
7R	river	SD0034	10/6/2004	0	0	6	3.3 *U*	1.7 *U*	75 *J*	3.4 *J*	17 *UJ*	1.9 *J*
8	river	SD0010	10/1/2004	1	0	6	4.5 *U*	2.3 *U*	1,900	11	23 *UJ*	5.3 *J*
8	river	SD0011	10/1/2004	2	0	6	9.7 *U*	4.9 *U*	1,600 *J*	9.4 *J*	49 *UJ*	7.3 *J*
9	river	SD0012	10/1/2004	0	0	6	4.1 *U*	2.1 *U*	1,800	4.5 *J*	21 *UJ*	2.5 *J*
10	river	SD0033	10/6/2004	0	0	6	4.0 *U*	2.0 *U*	24 *J*	2.5 *U*	20 *UJ*	2.2 *U*
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	4.9 *U*	2.5 *U*	57 *J*	3.1 *U*	25 *UJ*	5.8 *J*
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	11 *U*	5.3 *U*	2,000 *J*	10 *J*	53 *UJ*	14 *J*
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	8.5 *U*	4.3 *U*	330 *J*	25	43 *UJ*	9.1 *J*
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	3.7 *U*	1.9 *U*	360	2.3 *U*	19 *UJ*	2.8 *J*
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	3.2 *U*	1.6 *U*	38 *J*	2.0 *U*	16 *UJ*	1.8 *U*
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	29	5.0 *U*	280 *J*	6.2 *U*	50 *UJ*	7.7 *J*
13	marsh	SD0019	10/4/2004	0	0	6	13	2.5 *U*	24 *U*	12	25 *UJ*	4.8 *J*
14	marsh	SD0020	10/4/2004	0	0	6	18 *J*	5.5 *UJ*	70 *J*	15 *J*	55 *UJ*	6.0 *UJ*
16	marsh	SD0007	9/29/2004	0	0	6	13	1.7 *U*	21 *U*	4.2 *J*	17 *UJ*	8.9
17	marsh	SD0017	10/4/2004	1	0	6	19 *J*	5.2 *U*	81 *J*	14 *J*	52 *UJ*	7.4 *J*
17	marsh	SD0018	10/4/2004	2	0	6	11 *U*	5.2 *U*	380 *J*	18 *J*	52 *UJ*	7.3 *J*
19	marsh	SD0005	9/29/2004	0	0	6	8.7 *UJ*	4.4 *UJ*	86 *J*	5.5 *UJ*	44 *UJ*	5.4 *J*
11A	upland	SD0006	9/29/2004	0	0	6	3.0 *U*	1.5 *U*	190	9.5	15 *UJ*	3.5 *J*
13A	upland	SD0002	9/28/2004	0	0	6	14 *U*	6.9 *U*	80 *J*	8.6 *U*	69 *UJ*	16 *J*
18A	upland	SD0004	9/28/2004	0	0	6	57 *U*	29 *U*	150 *U*	36 *U*	290 *UJ*	31 *U*
22	upland	SD0003	9/28/2004	0	0	6	60 *U*	30 *U*	6,100	38 *U*	300 *UJ*	33 *U*
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	3.6 *U*	1.8 *U*	170	13	18 *UJ*	6.9 *J*
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	3.9 *U*	2.0 *U*	54 *J*	10	20 *UJ*	2.9 *J*
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	4.8 *U*	2.4 *U*	260	13	24 *UJ*	4.9 *J*

Table C-2. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	Chrysene (µg/kg dry)	Dibenz[a,h]-anthracene (µg/kg dry)	Dibenzofuran (µg/kg dry)	Diethyl phthalate (µg/kg dry)	Dimethyl phthalate (µg/kg dry)	Di-*n*-butyl phthalate (µg/kg dry)
River												
1	river	SD0025	10/5/2004	0	0	6	160	20	4.0 *U*	11 *U*	5.6 *U*	8.0 *U*
2	river	SD0024	10/5/2004	0	0	6	230	29	13 *J*	15 *U*	7.3 *U*	20
3	river	SD0023	10/5/2004	0	0	6	320	48 *J*	27 *U*	71 *U*	37 *U*	53 *U*
4	river	SD0022	10/5/2004	0	0	6	91 *J*	33 *UJ*	19 *UJ*	52 *UJ*	27 *UJ*	40 *J*
5	river	SD0008	10/1/2004	0	0	6	72	15	2.9 *J*	6.0 *U*	3.1 *U*	4.5 *U*
6	river	SD0009	10/1/2004	0	0	6	80	13	3.5 *J*	5.7 *U*	3.0 *U*	4.6 *J*
7R	river	SD0034	10/6/2004	0	0	6	21	4.0 *J*	1.8 *U*	4.8 *U*	2.5 *U*	3.6 *U*
8	river	SD0010	10/1/2004	1	0	6	53	11	3.8 *J*	6.6 *U*	3.4 *U*	8.5 *J*
8	river	SD0011	10/1/2004	2	0	6	44	11 *J*	5.3 *U*	15 *U*	7.3 *U*	12 *J*
9	river	SD0012	10/1/2004	0	0	6	17	3.9 *J*	2.3 *U*	6.0 *U*	3.1 *U*	4.6 *J*
10	river	SD0033	10/6/2004	0	0	6	2.4 *U*	3.7 *U*	2.2 *U*	5.8 *U*	3.0 *U*	4.3 *U*
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	43	12	6.6 *J*	7.1 *U*	3.7 *U*	5.8 *J*
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	130	32	16 *J*	16 *U*	7.9 *U*	22 *J*
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	65	17 *J*	5.3 *J*	13 *U*	6.4 *U*	14 *J*
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	26	7.0 *J*	2.0 *U*	5.4 *U*	2.8 *U*	6.3 *J*
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	7.5	3.7 *J*	1.8 *U*	4.7 *U*	2.4 *U*	3.5 *U*
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	47	15 *J*	5.4 *U*	15 *U*	7.4 *U*	11 *J*
13	marsh	SD0019	10/4/2004	0	0	6	56	18	2.9 *J*	7.2 *U*	3.7 *U*	10 *J*
14	marsh	SD0020	10/4/2004	0	0	6	22 *J*	10 *UJ*	6.0 *UJ*	16 *UJ*	8.2 *UJ*	12 *UJ*
16	marsh	SD0007	9/29/2004	0	0	6	150	26	4.7 *J*	4.9 *U*	2.6 *U*	3.8 *J*
17	marsh	SD0017	10/4/2004	1	0	6	44	10 *J*	5.8 *J*	16 *U*	7.8 *U*	12 *U*
17	marsh	SD0018	10/4/2004	2	0	6	55	13 *J*	5.7 *U*	16 *U*	7.8 *U*	13 *J*
19	marsh	SD0005	9/29/2004	0	0	6	33 *J*	8.0 *UJ*	4.7 *UJ*	13 *UJ*	6.5 *UJ*	9.4 *UJ*
11A	upland	SD0006	9/29/2004	0	0	6	23	5.8 *J*	2.3 *J*	4.4 *U*	6.2	48
13A	upland	SD0002	9/28/2004	0	0	6	79	23 *J*	7.4 *U*	20 *U*	11 *U*	15 *U*
18A	upland	SD0004	9/28/2004	0	0	6	34 *U*	53 *U*	31 *U*	83 *U*	43 *U*	62 *U*
22	upland	SD0003	9/28/2004	0	0	6	85 *J*	55 *U*	33 *U*	120 *J*	45 *U*	2,800
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	91	15	3.1 *J*	5.2 *U*	2.7 *U*	14
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	24	3.6 *U*	2.6 *J*	5.7 *U*	2.9 *U*	4.2 *U*
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	69	13	3.4 *J*	7.0 *U*	3.6 *U*	9.7 *J*

Table C-2. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	Di-*n*-octyl phthalate (µg/kg dry)	Fluoranthene (µg/kg dry)	Fluorene (µg/kg dry)	Hexachloro-benzene (µg/kg dry)	Hexachloro-butadiene (µg/kg dry)	Hexachloro-cyclopentadiene (µg/kg dry)
River												
1	river	SD0025	10/5/2004	0	0	6	3.7 *U*	250	8.0 *J*	6.5 *U*	4.3 *U*	46 *U*
2	river	SD0024	10/5/2004	0	0	6	4.9 *U*	440	15 *J*	8.5 *U*	5.7 *U*	61 *U*
3	river	SD0023	10/5/2004	0	0	6	25 *U*	530	35 *U*	43 *U*	29 *U*	310 *U*
4	river	SD0022	10/5/2004	0	0	6	78 *J*	250 *J*	25 *UJ*	31 *UJ*	21 *UJ*	220 *UJ*
5	river	SD0008	10/1/2004	0	0	6	2.1 *U*	90	5.0 *J*	3.6 *U*	2.4 *U*	26 *U*
6	river	SD0009	10/1/2004	0	0	6	2.0 *U*	140	4.8 *J*	3.5 *U*	2.3 *U*	25 *U*
7R	river	SD0034	10/6/2004	0	0	6	1.7 *U*	25	2.3 *U*	2.9 *U*	1.9 *U*	21 *U*
8	river	SD0010	10/1/2004	1	0	6	2.3 *U*	76	5.3 *J*	4.0 *U*	2.7 *U*	29 *U*
8	river	SD0011	10/1/2004	2	0	6	4.9 *U*	96	6.9 *U*	8.5 *U*	5.7 *U*	61 *U*
9	river	SD0012	10/1/2004	0	0	6	2.1 *U*	52	2.9 *U*	3.6 *U*	2.4 *U*	26 *U*
10	river	SD0033	10/6/2004	0	0	6	2.0 *U*	4.6 *J*	2.9 *U*	3.5 *U*	2.4 *U*	25 *U*
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	2.5 *U*	86	6.3 *J*	4.3 *U*	2.9 *U*	31 *U*
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	5.3 *U*	320	22 *J*	9.3 *U*	6.2 *U*	66 *U*
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	4.3 *U*	140	7.3	7.4 *U*	5.0 *U*	53 *U*
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	1.9 *U*	38	2.7 *J*	3.2 *U*	2.2 *U*	23 *U*
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	1.6 *U*	12	2.3 *U*	2.8 *U*	1.9 *U*	20 *U*
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	5.0 *U*	65	7.0 *U*	8.7 *U*	5.8 *U*	62 *U*
13	marsh	SD0019	10/4/2004	0	0	6	2.5 *U*	93	3.5 *U*	4.4 *U*	2.9 *U*	31 *U*
14	marsh	SD0020	10/4/2004	0	0	6	5.5 *UJ*	44 *J*	7.8 *UJ*	9.6 *UJ*	6.4 *UJ*	69 *UJ*
16	marsh	SD0007	9/29/2004	0	0	6	1.7 *U*	170	6.4 *J*	3.0 *U*	2.0 *U*	21 *U*
17	marsh	SD0017	10/4/2004	1	0	6	5.2 *U*	77	7.4 *U*	9.1 *U*	6.1 *U*	65 *U*
17	marsh	SD0018	10/4/2004	2	0	6	15 *J*	98	7.4 *U*	9.1 *U*	6.1 *U*	65 *U*
19	marsh	SD0005	9/29/2004	0	0	6	4.4 *UJ*	58 *J*	6.2 *UJ*	7.6 *UJ*	5.1 *UJ*	55 *UJ*
11A	upland	SD0006	9/29/2004	0	0	6	1.5 *U*	32	2.1 *U*	2.8 *J*	1.8 *U*	19 *U*
13A	upland	SD0002	9/28/2004	0	0	6	6.9 *U*	84	9.7 *U*	12 *U*	8.0 *U*	86 *U*
18A	upland	SD0004	9/28/2004	0	0	6	29 *U*	53 *U*	41 *U*	50 *U*	34 *U*	360 *U*
22	upland	SD0003	9/28/2004	0	0	6	30 *U*	220	43 *U*	53 *U*	35 *U*	380 *U*
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	2.7 *J*	170	4.6 *J*	3.1 *U*	2.1 *U*	23 *U*
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	2.0 *U*	42	2.8 *U*	3.4 *U*	2.3 *U*	25 *U*
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	4.7 *J*	100	4.3 *J*	4.2 *U*	2.8 *U*	30 *U*

Table C-2. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	Hexachloro-ethane (µg/kg dry)	Indeno[1,2,3-cd]pyrene (µg/kg dry)	Isophorone (µg/kg dry)	Naphthalene (µg/kg dry)	Nitrobenzene (µg/kg dry)	*N*-nitroso-di-*n*-propylamine (µg/kg dry)
River												
1	river	SD0025	10/5/2004	0	0	6	6.8 *U*	74	5.0 *U*	10 *J*	6.2 *U*	9.9 *U*
2	river	SD0024	10/5/2004	0	0	6	8.9 *U*	97	6.5 *U*	52	8.1 *U*	13 *U*
3	river	SD0023	10/5/2004	0	0	6	45 *U*	170	33 *U*	54 *J*	41 *U*	65 *U*
4	river	SD0022	10/5/2004	0	0	6	33 *UJ*	95 *J*	24 *UJ*	53 *J*	30 *UJ*	47 *UJ*
5	river	SD0008	10/1/2004	0	0	6	3.8 *U*	60	2.8 *U*	24	3.5 *U*	5.5 *U*
6	river	SD0009	10/1/2004	0	0	6	3.6 *U*	55	2.7 *U*	31	3.3 *U*	5.3 *U*
7R	river	SD0034	10/6/2004	0	0	6	3.0 *U*	15	2.2 *U*	2.5 *J*	2.7 *U*	4.4 *U*
8	river	SD0010	10/1/2004	1	0	6	4.2 *U*	44	3.0 *U*	9.8	3.8 *U*	6.0 *U*
8	river	SD0011	10/1/2004	2	0	6	8.9 *U*	42	6.5 *U*	9.5 *J*	8.1 *U*	13 *U*
9	river	SD0012	10/1/2004	0	0	6	3.8 *U*	14	2.8 *U*	4.4 *J*	3.4 *U*	5.5 *U*
10	river	SD0033	10/6/2004	0	0	6	3.7 *U*	3.2 *U*	2.7 *U*	2.3 *J*	3.4 *U*	5.3 *U*
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	4.5 *U*	43	3.3 *U*	50	4.1 *U*	6.5 *U*
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	9.7 *U*	120	7.1 *U*	37	8.8 *U*	15 *U*
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	7.8 *U*	68	5.7 *U*	19	7.1 *U*	12 *U*
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	3.4 *U*	20	2.5 *U*	9.7	3.1 *U*	4.9 *U*
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	3.0 *U*	9.4	2.2 *U*	2.2 *J*	2.7 *U*	4.3 *U*
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	9.1 *U*	52	6.6 *U*	43	8.2 *U*	14 *U*
13	marsh	SD0019	10/4/2004	0	0	6	4.6 *U*	42	3.3 *U*	10 *J*	29	6.6 *U*
14	marsh	SD0020	10/4/2004	0	0	6	10 *UJ*	25 *J*	7.3 *UJ*	14 *J*	34 *J*	15 *UJ*
16	marsh	SD0007	9/29/2004	0	0	6	3.1 *U*	110	3.9 *J*	45	5.3 *J*	4.5 *U*
17	marsh	SD0017	10/4/2004	1	0	6	9.5 *U*	37	6.9 *U*	26 *J*	28 *J*	14 *U*
17	marsh	SD0018	10/4/2004	2	0	6	9.6 *U*	56	7.0 *U*	14 *J*	8.7 *UJ*	14 *U*
19	marsh	SD0005	9/29/2004	0	0	6	8.0 *UJ*	29 *J*	5.8 *UJ*	4.7 *UJ*	7.3 *UJ*	12 *UJ*
11A	upland	SD0006	9/29/2004	0	0	6	2.8 *U*	25	2.3 *J*	6.2	4.3 *J*	4.0 *U*
13A	upland	SD0002	9/28/2004	0	0	6	13 *U*	71	9.1 *U*	7.4 *U*	12 *U*	19 *U*
18A	upland	SD0004	9/28/2004	0	0	6	53 *U*	45 *U*	38 *U*	31 *U*	48 *U*	76 *U*
22	upland	SD0003	9/28/2004	0	0	6	55 *U*	99 *J*	86 *J*	40 *J*	50 *U*	80 *U*
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	3.3 *U*	61	2.4 *U*	8.9	3.0 *U*	4.7 *U*
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	3.6 *U*	17	2.6 *U*	9.0	3.3 *U*	5.2 *U*
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	4.4 *U*	53	3.2 *U*	16	4.0 *U*	6.4 *U*

Table C-2. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	*N*-nitrosodiphenyl-amine (µg/kg dry)	Pentachloro-phenol (µg/kg dry)	Phenanthrene (µg/kg dry)	Phenol (µg/kg dry)	Pyrene (µg/kg dry)	Total PAHs (µg/kg dry)
River												
1	river	SD0025	10/5/2004	0	0	6	6.8 *U*	27 *U*	52	12 *U*	230	1,400 *J*
2	river	SD0024	10/5/2004	0	0	6	8.9 *U*	35 *U*	96	23 *U*	560	2,400 *J*
3	river	SD0023	10/5/2004	0	0	6	45 *U*	180 *U*	120	100 *J*	710	3,300 *J*
4	river	SD0022	10/5/2004	0	0	6	80 *J*	130 *U*	70 *J*	49 *U*	300 *J*	1,600 *J*
5	river	SD0008	10/1/2004	0	0	6	3.8 *U*	15 *U*	22	9.3 *U*	88	760 *J*
6	river	SD0009	10/1/2004	0	0	6	7.6 *J*	14 *U*	45	9.7 *U*	130	910 *J*
7R	river	SD0034	10/6/2004	0	0	6	3.0 *U*	12 *U*	7.1	14 *J*	27	200 *J*
8	river	SD0010	10/1/2004	1	0	6	4.2 *U*	16 *U*	27	18 *J*	110	620 *J*
8	river	SD0011	10/1/2004	2	0	6	8.9 *U*	35 *U*	24	15 *J*	110	630 *J*
9	river	SD0012	10/1/2004	0	0	6	3.8 *U*	15 *U*	9.6	9.0 *U*	53	260 *J*
10	river	SD0033	10/6/2004	0	0	6	3.7 *U*	15 *U*	2.2 *U*	9.9 *U*	5.1 *J*	35 *J*
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	12	18 *U*	27	12 *U*	92	670 *J*
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	26	38 *U*	110	13 *J*	340	2,000 *J*
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	7.8 *U*	30 *U*	46	19 *J*	140	940 *J*
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	3.4 *U*	13 *U*	19	41	52	320 *J*
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	3.0 *U*	12 *U*	4.1 *J*	7.0 *U*	13	100 *J*
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	9.1 *U*	35 *U*	32	150	63	620 *J*
13	marsh	SD0019	10/4/2004	0	0	6	4.6 *U*	18 *U*	36	9.2 *U*	71	570 *J*
14	marsh	SD0020	10/4/2004	0	0	6	10 *UJ*	39 *U*	22 *J*	38 *J*	39 *J*	320 *J*
16	marsh	SD0007	9/29/2004	0	0	6	3.1 *U*	15 *J*	61	120	160	1,400 *J*
17	marsh	SD0017	10/4/2004	1	0	6	9.5 *U*	37 *U*	33	27 *J*	56	520 *J*
17	marsh	SD0018	10/4/2004	2	0	6	9.6 *U*	37 *U*	37	19 *J*	89	680 *J*
19	marsh	SD0005	9/29/2004	0	0	6	8.0 *UJ*	31 *U*	20 *J*	29 *J*	41 *J*	350 *J*
11A	upland	SD0006	9/29/2004	0	0	6	4.6 *J*	15 *J*	19	110	36	300 *J*
13A	upland	SD0002	9/28/2004	0	0	6	13 *U*	49 *U*	31 *J*	30 *J*	71	810 *J*
18A	upland	SD0004	9/28/2004	0	0	6	53 *U*	210 *U*	31 *U*	45 *U*	33 *J*	330 *J*
22	upland	SD0003	9/28/2004	0	0	6	120 *J*	220 *U*	94 *J*	580	200	1,400 *J*
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	3.3 *U*	13 *U*	59	6.0 *U*	120	910 *J*
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	3.6 *U*	14 *U*	18	5.0 *U*	32	250 *J*
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	4.4 *U*	17 *U*	36	11 *U*	86	710 *J*

Note: PAH - polycyclic aromatic hydrocarbons
Rmarsh - marsh reference zone
Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table C-3. Pesticide/PCB results for river and marsh sediment

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	4,4'-DDD (µg/kg dry)	4,4'-DDE (µg/kg dry)	4,4'-DDT (µg/kg dry)	Aldrin (µg/kg dry)	α-Chlordane (µg/kg dry)	α-Endosulfan (µg/kg dry)
River												
1	river	SD0025	10/5/2004	0	0	6	4.2 *J*	4.9 *J*	4.2 *J*	1.2 *J*	0.81 *J*	0.69 *J*
2	river	SD0024	10/5/2004	0	0	6	20 *J*	27 *J*	21 *J*	0.51 *U*	4.5 *J*	0.85 *J*
3	river	SD0023	10/5/2004	0	0	6	37 *J*	59 *J*	28 *J*	1.1 *U*	4.6 *J*	1.7 *J*
4	river	SD0022	10/5/2004	0	0	6	30 *J*	32 *U*	140 *J*	3.1 *U*	6.6 *U*	11 *J*
5	river	SD0008	10/1/2004	0	0	6	1.1 *J*	0.57 *J*	0.81 *J*	0.43 *U*	0.11 *U*	0.19 *U*
6	river	SD0009	10/1/2004	0	0	6	2.6 *J*	2.9 *J*	2.6 *J*	0.41 *U*	0.39 *J*	0.36 *U*
7R	river	SD0034	10/6/2004	0	0	6	0.82 *U*	2.1 *J*	3.2 *J*	0.34 *U*	0.50 *J*	0.46 *J*
8	river	SD0010	10/1/2004	1	0	6	5.9 *J*	8.4 *J*	12 *J*	3.9 *J*	1.1 *U*	1.9 *J*
8	river	SD0011	10/1/2004	2	0	6	7.2 *J*	9.4 *J*	12 *J*	4.3 *J*	0.13 *U*	2.2 *J*
9	river	SD0012	10/1/2004	0	0	6	3.5 *J*	3.5 *J*	4.1 *J*	2.1 *J*	0.69 *J*	1.5 *J*
10	river	SD0033	10/6/2004	0	0	6	0.66 *J*	0.36 *J*	0.38 *J*	0.42 *U*	0.11 *U*	0.19 *U*
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	1.1 *J*	1.1 *J*	1.2 *J*	0.51 *U*	0.13 *U*	0.23 *U*
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	34 *J*	110 *J*	62 *J*	5.5 *U*	11 *J*	4.7 *J*
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	18 *J*	23 *J*	21 *J*	0.88 *U*	5.0 *J*	3.9 *J*
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	8.0 *J*	13 *J*	6.7 *J*	0.39 *U*	0.44 *U*	0.20 *U*
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	2.3 *J*	1.5 *J*	2.9 *J*	0.51 *J*	0.35 *J*	0.35 *U*
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	6.2 *J*	5.6 *U*	41 *J*	1.1 *U*	4.2 *J*	2.1 *U*
13	marsh	SD0019	10/4/2004	0	0	6	1.3 *U*	9.1 *J*	67 *J*	1.1 *J*	2.6 *J*	1.4 *U*
14	marsh	SD0020	10/4/2004	0	0	6	13 *J*	14 *J*	25 *J*	4.0 *J*	6.2 *J*	5.6 *J*
16	marsh	SD0007	9/29/2004	0	0	6	1.3 *U*	7.0 *U*	25 *J*	3.5 *U*	1.6 *J*	7.0 *U*
17	marsh	SD0017	10/4/2004	1	0	6	8.8 *J*	8.9 *U*	200 *J*	2.2 *U*	8.1 *J*	2.2 *U*
17	marsh	SD0018	10/4/2004	2	0	6	8.8 *J*	9.4 *U*	180 *J*	2.2 *U*	8.4 *J*	2.2 *U*
19	marsh	SD0005	9/29/2004	0	0	6	1.9 *U*	2.5 *U*	38 *J*	7.0 *J*	2.8 *J*	6.5 *J*
11A	upland	SD0006	9/29/2004	0	0	6	2.8 *J*	6.3 *U*	64 *J*	27 *J*	0.77 *U*	13 *J*
13A	upland	SD0002	9/28/2004	0	0	6	0.51 *J*	0.80 *J*	2.2 *J*	0.29 *U*	0.35 *J*	0.13 *U*
18A	upland	SD0004	9/28/2004	0	0	6	1.7 *U*	0.60 *U*	6.7 *J*	0.30 *U*	0.30 *J*	2.1 *J*
22	upland	SD0003	9/28/2004	0	0	6	6.3 *U*	0.95 *U*	440 *J*	13 *U*	27 *U*	32 *U*
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	2.7 *J*	5.7 *J*	24 *J*	0.37 *U*	2.2 *J*	1.1 *U*
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	1.4 *J*	2.7 *J*	12 *J*	0.41 *U*	1.6 *J*	0.81 *U*
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	4.2 *J*	9.4 *J*	30 *J*	0.99 *U*	10 *J*	7.5 *J*

Table C-3. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	α-Hexachloro-cyclohexane (µg/kg dry)	β-Endosulfan (µg/kg dry)	β-Hexachloro-cyclohexane (µg/kg dry)	δ-Hexachloro-cyclohexane (µg/kg dry)	Dieldrin (µg/kg dry)	Endosulfan Sulfate (µg/kg dry)
River												
1	river	SD0025	10/5/2004	0	0	6	0.13 *U*	1.1 *J*	0.34 *U*	0.22 *U*	1.6 *U*	0.33 *U*
2	river	SD0024	10/5/2004	0	0	6	0.69 *J*	1.8 *U*	1.0 *U*	0.29 *U*	6.7 *U*	0.43 *U*
3	river	SD0023	10/5/2004	0	0	6	0.34 *U*	9.7 *J*	0.90 *U*	0.57 *U*	4.7 *U*	0.86 *U*
4	river	SD0022	10/5/2004	0	0	6	1.4 *U*	47 *J*	1.5 *U*	5.4 *U*	1.5 *U*	0.62 *U*
5	river	SD0008	10/1/2004	0	0	6	0.15 *U*	0.11 *U*	0.38 *U*	0.24 *U*	0.86 *U*	0.36 *U*
6	river	SD0009	10/1/2004	0	0	6	0.14 *U*	0.26 *U*	0.36 *U*	0.23 *U*	0.53 *U*	0.35 *U*
7R	river	SD0034	10/6/2004	0	0	6	0.12 *U*	0.69 *J*	0.30 *U*	0.19 *U*	0.79 *U*	0.67 *U*
8	river	SD0010	10/1/2004	1	0	6	0.16 *U*	2.5 *J*	1.7 *U*	0.27 *UJ*	2.9 *U*	1.2 *UJ*
8	river	SD0011	10/1/2004	2	0	6	0.22 *U*	2.6 *J*	11 *U*	0.54 *J*	3.0 *U*	2.6 *J*
9	river	SD0012	10/1/2004	0	0	6	0.15 *U*	1.2 *U*	0.65 *U*	0.24 *U*	1.7 *U*	0.37 *U*
10	river	SD0033	10/6/2004	0	0	6	0.14 *U*	0.11 *U*	0.37 *U*	0.24 *U*	0.54 *J*	0.35 *U*
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	0.17 *U*	0.77 *J*	0.99 *U*	0.29 *U*	0.99 *U*	0.46 *U*
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	1.9 *U*	11 *U*	4.9 *U*	3.1 *U*	23 *U*	4.7 *U*
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	0.46 *J*	3.3 *U*	2.0 *U*	0.50 *U*	1.8 *U*	0.74 *U*
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	0.13 *U*	0.76 *U*	0.34 *U*	0.33 *U*	0.13 *U*	0.76 *U*
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	0.12 *U*	0.28 *J*	0.66 *U*	0.19 *U*	0.66 *U*	0.28 *U*
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	1.4 *J*	5.9 *U*	0.91 *U*	1.5 *J*	13 *U*	2.5 *U*
13	marsh	SD0019	10/4/2004	0	0	6	0.92 *J*	4.9 *U*	2.2 *U*	1.8 *U*	3.7 *U*	7.0 *U*
14	marsh	SD0020	10/4/2004	0	0	6	0.82 *J*	5.3 *U*	6.5 *U*	0.64 *U*	19 *J*	2.3 *U*
16	marsh	SD0007	9/29/2004	0	0	6	1.2 *U*	13 *U*	3.1 *U*	2.0 *U*	39 *U*	3.0 *U*
17	marsh	SD0017	10/4/2004	1	0	6	0.36 *U*	22 *U*	0.95 *U*	2.2 *U*	46 *U*	67 *U*
17	marsh	SD0018	10/4/2004	2	0	6	2.8 *U*	11 *U*	0.96 *U*	2.2 *U*	54 *U*	65 *U*
19	marsh	SD0005	9/29/2004	0	0	6	0.36 *J*	1.9 *U*	2.9 *U*	0.51 *U*	3.4 *U*	0.76 *U*
11A	upland	SD0006	9/29/2004	0	0	6	1.1 *U*	6.2 *U*	13 *J*	6.2 *U*	6.2 *U*	2.6 *U*
13A	upland	SD0002	9/28/2004	0	0	6	0.095 *U*	0.070 *U*	8.8 *J*	0.16 *U*	0.57 *U*	0.24 *U*
18A	upland	SD0004	9/28/2004	0	0	6	0.099 *U*	2.3 *J*	2.6 *J*	0.17 *U*	3.0 *J*	0.25 *U*
22	upland	SD0003	9/28/2004	0	0	6	1.1 *U*	8.3 *U*	6.3 *U*	17 *U*	96 *U*	2.7 *U*
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	0.23 *J*	3.2 *U*	4.0 *U*	0.77 *U*	2.3 *U*	0.31 *U*
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	0.32 *J*	0.098 *U*	3.8 *J*	1.4 *U*	0.85 *U*	1.3 *U*
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	0.99 *U*	1.6 *J*	5.8 *U*	0.99 *U*	16 *J*	1.3 *U*

Table C-3. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	Endrin (µg/kg dry)	Endrin aldehyde (µg/kg dry)	Endrin Ketone (µg/kg dry)	γ-Chlordane (µg/kg dry)	γ-Hexachloro-cyclohexane (µg/kg dry)	Heptachlor (µg/kg dry)
River												
1	river	SD0025	10/5/2004	0	0	6	0.37 *U*	0.25 *U*	0.77 *U*	2.4 *J*	0.16 *U*	0.15 *U*
2	river	SD0024	10/5/2004	0	0	6	0.49 *U*	2.8 *U*	2.1 *U*	13 *J*	0.20 *U*	0.20 *U*
3	river	SD0023	10/5/2004	0	0	6	0.98 *U*	2.0 *U*	2.0 *U*	19 *J*	0.41 *U*	2.0 *U*
4	river	SD0022	10/5/2004	0	0	6	3.4 *U*	13 *U*	17 *U*	47 *J*	3.9 *J*	2.8 *U*
5	river	SD0008	10/1/2004	0	0	6	0.42 *U*	0.28 *U*	0.18 *U*	0.27 *J*	0.19 *U*	0.17 *U*
6	river	SD0009	10/1/2004	0	0	6	0.40 *U*	0.27 *U*	0.37 *U*	1.8 *J*	0.82 *U*	0.16 *U*
7R	river	SD0034	10/6/2004	0	0	6	0.33 *U*	0.67 *U*	0.55 *J*	1.5 *J*	0.14 *U*	0.14 *U*
8	river	SD0010	10/1/2004	1	0	6	6.7 *J*	3.1 *J*	7.2 *U*	6.7 *J*	0.30 *J*	0.94 *U*
8	river	SD0011	10/1/2004	2	0	6	8.0 *J*	1.2 *J*	1.7 *U*	7.5 *J*	0.59 *J*	1.1 *U*
9	river	SD0012	10/1/2004	0	0	6	1.5 *U*	0.61 *U*	0.85 *U*	3.2 *J*	0.17 *U*	0.17 *U*
10	river	SD0033	10/6/2004	0	0	6	0.40 *U*	0.27 *U*	0.12 *U*	0.55 *J*	0.17 *U*	0.17 *U*
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	0.49 *U*	0.50 *U*	0.57 *J*	0.42 *U*	0.35 *U*	0.20 *U*
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	5.3 *U*	3.6 *U*	11 *U*	56 *J*	2.2 *U*	2.2 *U*
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	5.7 *J*	0.57 *U*	1.8 *U*	13 *J*	0.89 *J*	0.35 *U*
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	0.37 *U*	1.1 *U*	0.76 *U*	5.2 *J*	0.16 *U*	0.15 *U*
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	0.32 *U*	0.22 *U*	0.60 *J*	1.0 *J*	0.14 *U*	0.13 *U*
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	2.1 *U*	7.8 *J*	12 *U*	36 *J*	0.41 *U*	0.40 *U*
13	marsh	SD0019	10/4/2004	0	0	6	0.50 *U*	7.4 *J*	9.9 *U*	4.1 *U*	1.2 *J*	0.20 *U*
14	marsh	SD0020	10/4/2004	0	0	6	2.3 *U*	3.1 *J*	2.3 *U*	13 *J*	0.45 *U*	0.45 *U*
16	marsh	SD0007	9/29/2004	0	0	6	13 *J*	4.8 *J*	19 *J*	39 *J*	1.4 *U*	1.4 *U*
17	marsh	SD0017	10/4/2004	1	0	6	2.9 *U*	22 *U*	41 *J*	160 *J*	0.43 *UJ*	8.2 *J*
17	marsh	SD0018	10/4/2004	2	0	6	3.6 *U*	32 *U*	150 *J*	160 *J*	1.9 *J*	8.4 *J*
19	marsh	SD0005	9/29/2004	0	0	6	1.9 *U*	6.6 *J*	8.4 *J*	15 *J*	0.36 *U*	0.39 *U*
11A	upland	SD0006	9/29/2004	0	0	6	3.0 *U*	6.0 *J*	13 *J*	33 *J*	3.9 *J*	3.8 *U*
13A	upland	SD0002	9/28/2004	0	0	6	0.28 *U*	0.54 *J*	3.2 *J*	0.59 *U*	0.12 *U*	0.12 *U*
18A	upland	SD0004	9/28/2004	0	0	6	1.8 *J*	0.19 *U*	1.8 *U*	0.69 *U*	0.78 *J*	0.17 *U*
22	upland	SD0003	9/28/2004	0	0	6	6.3 *U*	30 *J*	22 *U*	790 *J*	14 *J*	6.3 *U*
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	0.36 *U*	1.4 *U*	5.9 *J*	5.4 *U*	0.15 *U*	0.15 *U*
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	0.39 *U*	0.74 *U*	1.9 *J*	2.1 *U*	0.16 *U*	0.35 *J*
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	0.48 *U*	1.3 *U*	2.3 *U*	14 *J*	0.20 *U*	0.99 *U*

Table C-3. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	Heptachlor Epoxide (µg/kg dry)	Methoxychlor (µg/kg dry)	Toxaphene (µg/kg dry)	Aroclor® 1016 (µg/kg dry)	Aroclor® 1221 (µg/kg dry)	Aroclor® 1232 (µg/kg dry)
River												
1	river	SD0025	10/5/2004	0	0	6	1.2 *U*	0.41 *U*	23 *U*	2.8 *U*	2.8 *U*	2.8 *U*
2	river	SD0024	10/5/2004	0	0	6	4.4 *U*	1.0 *U*	84 *U*	3.7 *U*	3.7 *U*	3.7 *U*
3	river	SD0023	10/5/2004	0	0	6	5.4 *U*	1.3 *U*	270 *U*	7.3 *U*	7.3 *U*	7.3 *U*
4	river	SD0022	10/5/2004	0	0	6	2.4 *U*	1.7 *U*	510 *U*	53 *U*	53 *U*	53 *U*
5	river	SD0008	10/1/2004	0	0	6	0.24 *U*	0.33 *U*	13 *U*	3.1 *U*	3.1 *U*	3.1 *U*
6	river	SD0009	10/1/2004	0	0	6	0.68 *J*	0.31 *U*	28 *U*	3.0 *U*	3.0 *U*	3.0 *U*
7R	river	SD0034	10/6/2004	0	0	6	0.85 *U*	0.67 *U*	12 *U*	2.5 *U*	2.5 *U*	2.5 *U*
8	river	SD0010	10/1/2004	1	0	6	2.7 *U*	0.94 *U*	160 *U*	3.4 *U*	3.4 *U*	3.4 *U*
8	river	SD0011	10/1/2004	2	0	6	2.9 *U*	4.7 *U*	200 *U*	3.7 *U*	3.7 *U*	3.7 *U*
9	river	SD0012	10/1/2004	0	0	6	1.8 *U*	0.85 *U*	50 *U*	3.1 *U*	3.1 *U*	3.1 *U*
10	river	SD0033	10/6/2004	0	0	6	0.25 *U*	0.63 *U*	17 *U*	3.0 *U*	3.0 *U*	3.0 *U*
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	0.45 *U*	0.39 *U*	31 *U*	3.7 *U*	3.7 *U*	3.7 *U*
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	11 *U*	4.2 *U*	900 *U*	40 *U*	40 *U*	40 *U*
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	4.0 *U*	1.5 *U*	83 *U*	6.4 *U*	6.4 *U*	6.4 *U*
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	2.2 *U*	0.29 *U*	38 *U*	2.8 *U*	2.8 *U*	2.8 *U*
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	0.31 *U*	0.26 *U*	9.7 *U*	2.4 *U*	2.4 *U*	2.4 *U*
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	41 *J*	22 *J*	240 *U*	74 *U*	74 *U*	74 *U*
13	marsh	SD0019	10/4/2004	0	0	6	1.2 *J*	2.5 *U*	230 *U*	3.7 *U*	3.7 *U*	3.7 *U*
14	marsh	SD0020	10/4/2004	0	0	6	6.6 *J*	2.3 *U*	340 *U*	8.2 *U*	8.2 *U*	8.2 *U*
16	marsh	SD0007	9/29/2004	0	0	6	27 *J*	2.7 *U*	1,200 *U*	26 *U*	26 *U*	26 *U*
17	marsh	SD0017	10/4/2004	1	0	6	100 *U*	32 *U*	4,500 *U*	78 *U*	78 *U*	78 *U*
17	marsh	SD0018	10/4/2004	2	0	6	29 *U*	28 *U*	1,100 *U*	78 *U*	78 *U*	78 *U*
19	marsh	SD0005	9/29/2004	0	0	6	3.0 *U*	32 *J*	560 *U*	6.5 *U*	6.5 *U*	6.5 *U*
11A	upland	SD0006	9/29/2004	0	0	6	7.3 *U*	6.3 *U*	810 *U*	23 *U*	23 *U*	23 *U*
13A	upland	SD0002	9/28/2004	0	0	6	0.16 *U*	0.57 *U*	14 *U*	2.1 *U*	2.1 *U*	2.1 *U*
18A	upland	SD0004	9/28/2004	0	0	6	1.1 *U*	1.5 *J*	120 *U*	2.2 *U*	2.2 *U*	2.2 *U*
22	upland	SD0003	9/28/2004	0	0	6	13 *U*	23 *J*	3,500 *U*	45 *U*	45 *U*	45 *U*
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	0.87 *U*	3.0 *J*	77 *U*	2.7 *U*	2.7 *U*	2.7 *U*
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	0.54 *U*	3.1 *J*	30 *U*	2.9 *U*	2.9 *U*	2.9 *U*
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	2.8 *U*	1.4 *U*	140 *U*	3.6 *U*	3.6 *U*	3.6 *U*

Table C-3. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	Aroclor® 1242 (µg/kg dry)	Aroclor® 1248 (µg/kg dry)	Aroclor® 1254 (µg/kg dry)	Aroclor® 1260 (µg/kg dry)	PCBs (µg/kg dry)
River											
1	river	SD0025	10/5/2004	0	0	6	2.8 *U*	67	60	51	180
2	river	SD0024	10/5/2004	0	0	6	3.7 *U*	320	580	240	1,100
3	river	SD0023	10/5/2004	0	0	6	7.3 *U*	350	620	350	1,300
4	river	SD0022	10/5/2004	0	0	6	53 *U*	4,600	3,400	1,500 *J*	9,500 *J*
5	river	SD0008	10/1/2004	0	0	6	3.1 *U*	6.6 *J*	8.7	5.9 *J*	21 *J*
6	river	SD0009	10/1/2004	0	0	6	3.0 *U*	52	79	39	170
7R	river	SD0034	10/6/2004	0	0	6	2.5 *U*	42	49	27	120
8	river	SD0010	10/1/2004	1	0	6	3.4 *U*	280 *J*	280	260	820 *J*
8	river	SD0011	10/1/2004	2	0	6	3.7 *U*	160 *J*	240	220	620 *J*
9	river	SD0012	10/1/2004	0	0	6	3.1 *U*	130	130	110	370
10	river	SD0033	10/6/2004	0	0	6	3.0 *U*	10	8.4	5.3 *J*	24 *J*
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	3.7 *U*	24	20	14	58
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	40 *U*	2,000	2,000	710	4,700
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	6.4 *U*	320 *J*	310	260	890 *J*
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	2.8 *U*	150	220	83	450
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	2.4 *U*	20	30	16 *J*	66 *J*
Marsh											
12	marsh	SD0016	10/4/2004	0	0	6	74 *U*	74 *U*	1,800	790	2,600
13	marsh	SD0019	10/4/2004	0	0	6	3.7 *U*	3.7 *U*	350 *J*	220 *J*	570 *J*
14	marsh	SD0020	10/4/2004	0	0	6	8.2 *U*	160 *J*	400	310	870 *J*
16	marsh	SD0007	9/29/2004	0	0	6	26 *U*	26 *U*	760	420	1,200
17	marsh	SD0017	10/4/2004	1	0	6	78 *U*	78 *U*	4,600	2,600	7,200
17	marsh	SD0018	10/4/2004	2	0	6	78 *U*	78 *U*	4,500	2,700	7,200
19	marsh	SD0005	9/29/2004	0	0	6	6.5 *U*	400	480	540 *J*	1,400 *J*
11A	upland	SD0006	9/29/2004	0	0	6	23 *U*	520	860	850 *J*	2,200 *J*
13A	upland	SD0002	9/28/2004	0	0	6	2.1 *U*	2.1 *U*	15	21	36
18A	upland	SD0004	9/28/2004	0	0	6	2.2 *U*	2.2 *U*	46	54	100
22	upland	SD0003	9/28/2004	0	0	6	45 *U*	8,700	7,200	4,400 *J*	20,000 *J*
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	2.7 *U*	2.7 *U*	140	140	280
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	2.9 *U*	2.9 *U*	50	48	98
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	3.6 *U*	120 *J*	300	350	770 *J*

Note: PCB - polychlorinated biphenyl
Rmarsh - marsh reference zone
Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table C-4. Dioxin and furan results for river and marsh sediment

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	2,3,7,8-Tetrachloro-dibenzo-*p*-dioxin (ng/kg dry)	1,2,3,7,8-Pentachloro-dibenzo-*p*-dioxin (ng/kg dry)	1,2,3,4,7,8-Hexachloro-dibenzo-*p*-dioxin (ng/kg dry)	1,2,3,6,7,8-Hexachloro-dibenzo-*p*-dioxin (ng/kg dry)	1,2,3,7,8,9-Hexachloro-dibenzo-*p*-dioxin (ng/kg dry)	1,2,3,4,6,7,8-Heptachloro-dibenzo-*p*-dioxin (ng/kg dry)
River												
8	river	SD0010	10/1/2004	1	0	6	0.46	0.20 *J*	0.28	1.4	1.3	14 *J*
8	river	SD0011	10/1/2004	2	0	6	0.53 *J*	0.36 *J*	0.54 *J*	2.2 *J*	1.7 *J*	24 *J*
9	river	SD0012	10/1/2004	0	0	6	0.48 *J*	0.36 *J*	0.47 *J*	2.8	2.1 *J*	47
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	1.2 *J*	0.75 *J*	0.54 *J*	5.3	3.6	68
Marsh												
15	marsh	SD0028	10/5/2004	0	0	6	1.7	2.7	3.1	6.7	8.4	97
20	marsh	SD0027	10/5/2004	0	0	6	0.67 *J*	1.6 *J*	1.7 *J*	3.8	4.9	33
23	marsh	SD0029	10/5/2004	0	0	6	0.70 *J*	0.66 *J*	0.95 *J*	1.9 *J*	3.0	43
24	marsh	SD0030	10/5/2004	0	0	6	0.069 *U*	0.21 *J*	0.35 *J*	0.69 *J*	1.4 *J*	22
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	6.6	4.5	3.3	32	17	260

Table C-4. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	Octachloro-dibenzo-*p*-dioxin (ng/kg dry)	2,3,7,8-Tetrachloro-dibenzofuran (ng/kg dry)	1,2,3,7,8-Pentachloro-dibenzofuran (ng/kg dry)	2,3,4,7,8-Pentachloro-dibenzofuran (ng/kg dry)	1,2,3,4,7,8-Hexachloro-dibenzofuran (ng/kg dry)	1,2,3,6,7,8-Hexachloro-dibenzofuran (ng/kg dry)
River												
8	river	SD0010	10/1/2004	1	0	6	330 *J*	1.8	0.71 *J*	1.0	2.2 *J*	0.75 *J*
8	river	SD0011	10/1/2004	2	0	6	670 *J*	1.9	0.96 *J*	1.0 *J*	3.8 *J*	1.5 *J*
9	river	SD0012	10/1/2004	0	0	6	1,400 *J*	1.9	0.78 *J*	1.0 *J*	2.3 *J*	0.89 *J*
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	1,300 *J*	3.5	1.4	1.7	4.4	1.8 *J*
Marsh												
15	marsh	SD0028	10/5/2004	0	0	6	4,200 *J*	7.9	9.3 *J*	11 *J*	37 *J*	13
20	marsh	SD0027	10/5/2004	0	0	6	410	4.0	5.1 *J*	5.1 *J*	20 *J*	7.5
23	marsh	SD0029	10/5/2004	0	0	6	3,200 *J*	2.7	5.1 *J*	2.7 *J*	17 *J*	7.4
24	marsh	SD0030	10/5/2004	0	0	6	840	1.4	1.5 *J*	3.1	4.1	1.2 *J*
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	3,400	22	10 *J*	15	28 *J*	10

Table C-4. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	2,3,4,6,7,8-Hexachloro-dibenzofuran (ng/kg dry)	1,2,3,7,8,9-Hexachloro-dibenzofuran (ng/kg dry)	1,2,3,4,6,7,8-Heptachloro-dibenzofuran (ng/kg dry)	1,2,3,4,7,8,9-Heptachloro-dibenzofuran (ng/kg dry)	Octachloro-dibenzofuran (ng/kg dry)	Total Tetrachloro-dibenzo-*p*-dioxins (ng/kg dry)
River												
8	river	SD0010	10/1/2004	1	0	6	0.88 *J*	0.12 *U*	8.4	0.53	43 *J*	9.2
8	river	SD0011	10/1/2004	2	0	6	1.5 *J*	0.24 *U*	12	1.2 *J*	22	11
9	river	SD0012	10/1/2004	0	0	6	1.0 *J*	0.15 *J*	11	0.73 *J*	31 *J*	4.1
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	2.0 *J*	0.47 *U*	21	1.1 *J*	31	5.6
Marsh												
15	marsh	SD0028	10/5/2004	0	0	6	11 *J*	0.67 *U*	100	6.9	100	55
20	marsh	SD0027	10/5/2004	0	0	6	7.2 *J*	2.5	50 *J*	5.2	46 *J*	32
23	marsh	SD0029	10/5/2004	0	0	6	3.4	0.19 *U*	75	1.7 *J*	53	11
24	marsh	SD0030	10/5/2004	0	0	6	1.2 *J*	0.17 *U*	12	0.85 *J*	16	5.4
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	11	3.4	100	8.6	230	71

Table C-4. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	Total Pentachloro-dibenzo-*p*-dioxins (ng/kg dry)	Total Hexachloro-dibenzo-*p*-dioxins (ng/kg dry)	Total Heptachloro-dibenzo-*p*-dioxins (ng/kg dry)	Total Tetrachloro-dibenzofurans (ng/kg dry)	Total Pentachloro-dibenzofurans (ng/kg dry)	Total Hexachloro-dibenzofurans (ng/kg dry)	Total Heptachloro-dibenzofurans (ng/kg dry)
River													
8	river	SD0010	10/1/2004	1	0	6	6.4	16	36 *J*	17	13	9.5	15
8	river	SD0011	10/1/2004	2	0	6	6.4	19	60 *J*	26	14	15	22
9	river	SD0012	10/1/2004	0	0	6	4.2	26	100	23	16	14	26
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	6.2	51	170	58	24	29	43
Marsh													
15	marsh	SD0028	10/5/2004	0	0	6	57	98	230	200	91	120	160
20	marsh	SD0027	10/5/2004	0	0	6	33	58	64	49	51	62	55
23	marsh	SD0029	10/5/2004	0	0	6	6.0	28	110	60	48	70	96
24	marsh	SD0030	10/5/2004	0	0	6	4.3	14	22	35	27	15	21
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	63	290	590	280	200	150	230

Note: Rmarsh - marsh reference zone
Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table C-5. Inorganic chemical results for river and marsh sediment

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	Aluminum (mg/kg dry)	Antimony (mg/kg dry)	Arsenic (mg/kg dry)	Barium (mg/kg dry)	Beryllium (mg/kg dry)	Cadmium (6010B SEM) (mg/kg dry)
River												
1	river	SD0025	10/5/2004	0	0	6	4,120 *J*	1.4 *UJ*	17.0	19.3	0.28	0.43
2	river	SD0024	10/5/2004	0	0	6	11,900 *J*	13.7 *UJ*	216	79.2	0.61	1.5
3	river	SD0023	10/5/2004	0	0	6	15,700 *J*	17.8 *J*	311	112	1.0	1.5
4	river	SD0022	10/5/2004	0	0	6	21,900 *J*	5.8 *J*	266	156	1.3	3.3
5	river	SD0008	10/1/2004	0	0	6	17,500	0.29 *UJ*	33.1	59.2	0.87 *J*	0.37
6	river	SD0009	10/1/2004	0	0	6	14,500	1.2 *UJ*	71.7	66.3	1.0 *J*	0.77
7R	river	SD0034	10/6/2004	0	0	6	4,740 *J*	0.83 *UJ*	9.1	13.8	0.49	0.26
8	river	SD0010	10/1/2004	1	0	6	13,000	1.5 *UJ*	27.4	56.8	0.78 *J*	0.85
8	river	SD0011	10/1/2004	2	0	6	11,900	2.3 *UJ*	27.5	61.0	0.74 *J*	0.88
9	river	SD0012	10/1/2004	0	0	6	12,200	0.75 *UJ*	11.0	45.3	1.1 *J*	0.27
10	river	SD0033	10/6/2004	0	0	6	10,800 *J*	0.27 *UJ*	10.8	26.7	0.59	0.18
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	18,500	3.0 *UJ*	1,470	127	0.94 *J*	3.1
13	marsh	SD0019	10/4/2004	0	0	6	14,000	3.1 *UJ*	67.5	67.2	0.49 *J*	0.26
14	marsh	SD0020	10/4/2004	0	0	6	13,600	2.2 *UJ*	43.2	56.0	1.5 *J*	1.3
16	marsh	SD0007	9/29/2004	0	0	6	14,100	1.4 *UJ*	1,050	92.2	0.32 *J*	0.65
17	marsh	SD0017	10/4/2004	1	0	6	4,820	13.4 *J*	15,000	106	0.25 *J*	3.7
17	marsh	SD0018	10/4/2004	2	0	6	5,400	10.1 *J*	20,500	99.9	0.23 *J*	3.8
19	marsh	SD0005	9/29/2004	0	0	6	14,200	1.8 *UJ*	16.6	63.8	0.72 *J*	1.1
11A	upland	SD0006	9/29/2004	0	0	6	10,400	1.2 *UJ*	31.6	46.6	0.51 *J*	2.7
13A	upland	SD0002	9/28/2004	0	0	6	3,820	0.46 *UJ*	9.3	10	0.25 *J*	0.14
18A	upland	SD0004	9/28/2004	0	0	6	6,320	0.99 *UJ*	12.0	31.8	0.30 *J*	0.12
22	upland	SD0003	9/28/2004	0	0	6	7,690	1.6 *UJ*	34.3	127	0.44 *J*	3.6
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	10,900 *J*	2.5 *UJ*	46.8	65.5	0.60	0.49
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	23,300	5.9 *J*	98.9	107	1.3 *J*	3.5
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	28,600	1.7 *UJ*	43.1	87.1	1.4 *J*	1.5
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	7,760 *J*	3.3 *UJ*	21.5	26.6	0.47	0.45
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	3,780 *J*	19.8 *J*	6.0	36.4	0.33	0.15
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	11,700	1.3 *UJ*	38.9	58.6	1.3 *J*	1.7
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	3,240	1.3 *UJ*	6.7	13.8	0.20 *J*	0.090
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	14,000 *J*	2.9 *J*	49.9	57.3	1.0	2.2

Table C-5. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	Cadmium (6020 NONE) (mg/kg dry)	Chromium (mg/kg dry)	Cobalt (mg/kg dry)	Copper (6010B NONE) (mg/kg dry)	Copper (6010B SEM) (mg/kg dry)	Iron (mg/kg dry)
River												
1	river	SD0025	10/5/2004	0	0	6	0.24	20.4	3.0 *J*	44.8	32.9	28,700
2	river	SD0024	10/5/2004	0	0	6	1.7	125	6.3 *J*	239	153	58,200
3	river	SD0023	10/5/2004	0	0	6	1.8	152	10.4 *J*	281	155	60,100
4	river	SD0022	10/5/2004	0	0	6	2.8	230	15.3 *J*	695	646	63,500
5	river	SD0008	10/1/2004	0	0	6	0.23	46.6	8.9 *J*	101	65.2	31,400
6	river	SD0009	10/1/2004	0	0	6	0.55	201	7.8 *J*	504	511	45,000
7R	river	SD0034	10/6/2004	0	0	6	0.18	26.2	3.1 *J*	35.8	26.8	36,700
8	river	SD0010	10/1/2004	1	0	6	0.57	405	5.7 *J*	249	208	44,200
8	river	SD0011	10/1/2004	2	0	6	0.54	489	5.6 *J*	274	224	43,200
9	river	SD0012	10/1/2004	0	0	6	0.29	46.8	4.8 *J*	69.0	38.9	19,200
10	river	SD0033	10/6/2004	0	0	6	0.10	27.0	5.1 *J*	21.8	9.2	28,500
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	3.0	105	10.5 *J*	287	204	35,700
13	marsh	SD0019	10/4/2004	0	0	6	0.13	47.1	6.9 *J*	476	199	37,000
14	marsh	SD0020	10/4/2004	0	0	6	0.99	245	29.6 *J*	1,240	1,060	50,700
16	marsh	SD0007	9/29/2004	0	0	6	0.46	77.1	7.5 *J*	113	94.0	23,900
17	marsh	SD0017	10/4/2004	1	0	6	3.0	109	15.2 *J*	554	267	103,000
17	marsh	SD0018	10/4/2004	2	0	6	2.9	107	15.0 *J*	577	279	101,000
19	marsh	SD0005	9/29/2004	0	0	6	0.86	310	5.2 *J*	1,140	1,160	29,400
11A	upland	SD0006	9/29/2004	0	0	6	3.2	311	6.5 *J*	382	579	31,800
13A	upland	SD0002	9/28/2004	0	0	6	0.14	13.9	1.6 *J*	15.8	12.5	10,000
18A	upland	SD0004	9/28/2004	0	0	6	0.091	78.4	2.2 *J*	59.7	38.2	55,700
22	upland	SD0003	9/28/2004	0	0	6	4.3	280	8.5 *J*	487	540	48,000
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	0.36	54.7	9.2 *J*	211	144	28,000
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	3.1	171	13.5 *J*	475	414	47,100
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	1.3	112	14.8 *J*	254	135	53,500
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	0.31	44.6	3.5 *J*	51.7	49.3	25,800
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	0.13	19.1	3.7 *J*	25.4	22.9	22,200
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	1.8	59.5	15.8 *J*	225	190	22,400
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	0.068	15.6	0.94 *J*	34.5	36.0	7,530
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	2.7	90.3	11.9 *J*	314	246	32,300

Table C-5. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	Lead (6010B NONE) (mg/kg dry)	Lead (6010B SEM) (mg/kg dry)	Manganese (mg/kg dry)	Mercury (7471A NONE) (mg/kg dry)	Mercury (7471A SEM) (mg/kg dry)	Nickel (6010B SEM) (mg/kg dry)
River												
1	river	SD0025	10/5/2004	0	0	6	50.1	28.6	128	0.17	0.010 *U*	4.4
2	river	SD0024	10/5/2004	0	0	6	163	145	334	1.7	0.020 *U*	11.9
3	river	SD0023	10/5/2004	0	0	6	182	121	318	2.1	0.030 *U*	15.4
4	river	SD0022	10/5/2004	0	0	6	265	195	358	3.9	0.020 *U*	27.2
5	river	SD0008	10/1/2004	0	0	6	73.5	71.3	316	0.63	0.020 *U*	19.0
6	river	SD0009	10/1/2004	0	0	6	99.6	73.0	224	0.69	0.020 *U*	23.9
7R	river	SD0034	10/6/2004	0	0	6	28.4	20.1	127	0.068	0.010 *U*	3.9
8	river	SD0010	10/1/2004	1	0	6	154	129	146	3.4	0.050	13.4
8	river	SD0011	10/1/2004	2	0	6	167	123	162	4.7	0.040	14.1
9	river	SD0012	10/1/2004	0	0	6	59.7	42.6	68.4	0.29	0.010 *U*	6.5
10	river	SD0033	10/6/2004	0	0	6	15.2	11.8	201	0.062	0.010 *U*	8.6
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	191	147	237	20.5	0.030	28.1
13	marsh	SD0019	10/4/2004	0	0	6	180	112	225	0.88	0.10	8.9
14	marsh	SD0020	10/4/2004	0	0	6	239	154	1,440	2.8	0.34	59.0
16	marsh	SD0007	9/29/2004	0	0	6	177	136	230	15.5	5.2	13.4
17	marsh	SD0017	10/4/2004	1	0	6	282	201	809	71.8	5.2	69.5
17	marsh	SD0018	10/4/2004	2	0	6	271	211	728	64.2	5.3	73.4
19	marsh	SD0005	9/29/2004	0	0	6	337	300	155	8.9	1.2	26.3
11A	upland	SD0006	9/29/2004	0	0	6	236	239	141	3.6	0.73	59.3
13A	upland	SD0002	9/28/2004	0	0	6	37.2	40.4	41.6	0.073	0.020	1.6
18A	upland	SD0004	9/28/2004	0	0	6	143	104	57.4	0.42	0.040	3.6
22	upland	SD0003	9/28/2004	0	0	6	319	206	289	10.5	3.2	48.1
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	117	93.1	286	0.85	0.010 *U*	26.2
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	239	210	368	3.9	0.020 *U*	29.3
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	189	142	517	1.3	0.030 *U*	20.9
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	42.3	41.7	85.2	0.33	0.010 *U*	5.2
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	72.9	65.4	60.3	0.078	0.010 *U*	5.6
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	167	145	677	0.76	0.14	16.9
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	82.2	101	29.4	0.18	0.020	2.4
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	180	137	374	1.4	0.040	19.8

Table C-5. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	Nickel (6020 NONE) (mg/kg dry)	Selenium (mg/kg dry)	Silver (mg/kg dry)	Thallium (mg/kg dry)	Vanadium (mg/kg dry)	Zinc (6010B NONE) (mg/kg dry)
River												
1	river	SD0025	10/5/2004	0	0	6	6.8 *J*	0.60	0.57	0.049 *U*	20.2	112
2	river	SD0024	10/5/2004	0	0	6	20.1 *UJ*	4.5	4.9	0.23 *U*	120	342
3	river	SD0023	10/5/2004	0	0	6	28.2 *UJ*	7.0	5.7	0.30 *U*	183	335
4	river	SD0022	10/5/2004	0	0	6	36.3 *UJ*	10	7.6	0.38 *U*	121	507
5	river	SD0008	10/1/2004	0	0	6	23.5 *UJ*	1.8	0.65	0.18 *U*	40.5	149
6	river	SD0009	10/1/2004	0	0	6	30.0 *UJ*	4.7	1.6	0.21 *U*	57.4	299
7R	river	SD0034	10/6/2004	0	0	6	5.9 *UJ*	0.40	0.50	0.055 *U*	48.2	91.8
8	river	SD0010	10/1/2004	1	0	6	16.8 *UJ*	1.8	26.1	0.19 *U*	179	156
8	river	SD0011	10/1/2004	2	0	6	16.3 *UJ*	2.1	32.3	0.17 *U*	180	147
9	river	SD0012	10/1/2004	0	0	6	10.1 *UJ*	1.5	0.99	0.16 *U*	114	89.1
10	river	SD0033	10/6/2004	0	0	6	12.5 *UJ*	0.40	0.15	0.12 *U*	31.6	63.0
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	35.0 *J*	7.4	6.2	0.26 *U*	58.1	438
13	marsh	SD0019	10/4/2004	0	0	6	21.9 *UJ*	2.7	3.9	0.26 *U*	66.8	94.9
14	marsh	SD0020	10/4/2004	0	0	6	62.8 *J*	4.5	23.6	0.18 *U*	88.1	344
16	marsh	SD0007	9/29/2004	0	0	6	18.0 *UJ*	1.7	4.0	0.10 *U*	44.5	184
17	marsh	SD0017	10/4/2004	1	0	6	78.4 *J*	7.4	13.8	0.19 *U*	60.8	504
17	marsh	SD0018	10/4/2004	2	0	6	75.0 *J*	6.9	10.9	0.19 *U*	60.5	449
19	marsh	SD0005	9/29/2004	0	0	6	29.7 *UJ*	1.3	133	0.26 *U*	35.3	151
11A	upland	SD0006	9/29/2004	0	0	6	50.3 *J*	0.40	48.2	0.13 *U*	34.2	76.5
13A	upland	SD0002	9/28/2004	0	0	6	3.6 *UJ*	0.30	0.50	0.043 *U*	13.0	42.7
18A	upland	SD0004	9/28/2004	0	0	6	5.1 *UJ*	0.60	4.8	0.10 *U*	53.2	51.4
22	upland	SD0003	9/28/2004	0	0	6	43.9 *J*	0.70	6.5	0.17 *U*	32.2	182
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	41.8 *J*	6.5	1.8	0.15 *U*	33.8	214
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	45.0 *J*	10.3	7.8	0.53 *U*	106	430
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	35.3 *J*	4.4	3.9	0.35 *U*	115	374
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	9.0 *UJ*	1.2	0.79	0.11 *U*	43.9	76.0
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	8.4 *UJ*	0.30	0.21	0.042 *U*	21.7	66.0
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	25.3 *UJ*	3.3	3.8	0.24 *U*	48.9	264
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	3.7 *UJ*	1.1	1.3	0.056 *U*	27.3	27.0
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	33.8 *J*	5.2	4.6	0.38 *U*	63.3	374

Table C-5. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	Zinc (6010B SEM) (mg/kg dry)	Cyanide (mg/kg dry)	Calcium (mg/kg dry)	Magnesium (mg/kg dry)	Potassium (mg/kg dry)	Sodium (mg/kg dry)
River												
1	river	SD0025	10/5/2004	0	0	6	87.9	0.20 *U*	1,540	1,520 *J*	514	1,970
2	river	SD0024	10/5/2004	0	0	6	234	0.40	2,480	4,660 *J*	1,680	4,510
3	river	SD0023	10/5/2004	0	0	6	257	0.20 *U*	3,730	7,570 *J*	2,540	10,500
4	river	SD0022	10/5/2004	0	0	6	442	0.30 *J*	3,090	7,270 *J*	2,920	7,810
5	river	SD0008	10/1/2004	0	0	6	119	0.20 *UR*	3,290	6,310 *J*	2,880	3,140
6	river	SD0009	10/1/2004	0	0	6	146	0.20 *U*	2,430	4,030 *J*	2,170	3,130
7R	river	SD0034	10/6/2004	0	0	6	64.3	0.20 *U*	609	1,200 *J*	594	1,200
8	river	SD0010	10/1/2004	1	0	6	113	0.20 *U*	2,030	3,460 *J*	1,630	3,400
8	river	SD0011	10/1/2004	2	0	6	125	0.20 *U*	2,170	3,640 *J*	1,490	3,810
9	river	SD0012	10/1/2004	0	0	6	71.3	0.20 *U*	982	2,140 *J*	1,140	3,190
10	river	SD0033	10/6/2004	0	0	6	42.5	0.20 *U*	2,080	4,830 *J*	2,340	2,790
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	464	0.20 *J*	3,220	6,080 *J*	2,640	7,740
13	marsh	SD0019	10/4/2004	0	0	6	44.7	0.40	6,230	3,210 *J*	2,280	329
14	marsh	SD0020	10/4/2004	0	0	6	271	0.70	3,160	5,200 *J*	1,790	11,900
16	marsh	SD0007	9/29/2004	0	0	6	170	0.35 *J*	2,840	4,770 *J*	1,740	115
17	marsh	SD0017	10/4/2004	1	0	6	338	1.7	14,400	1,130 *J*	585 *U*	227
17	marsh	SD0018	10/4/2004	2	0	6	363	1.5	13,800	1,200 *J*	723	193
19	marsh	SD0005	9/29/2004	0	0	6	127	2.1	1,730	1,650 *J*	1,550	494
11A	upland	SD0006	9/29/2004	0	0	6	115	1.4	1,640	1,260 *J*	909	91.3
13A	upland	SD0002	9/28/2004	0	0	6	34.4	0.12 *J*	208	283 *J*	259 *U*	22.5
18A	upland	SD0004	9/28/2004	0	0	6	17.3	0.12 *J*	111	704 *J*	496	57.8
22	upland	SD0003	9/28/2004	0	0	6	114	0.40	8,130	1,450 *J*	715	118
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	205	0.80	4,960	4,840 *J*	1,790	4,290
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	442	0.40	2,030	6,770 *J*	3,340	4,570
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	340	0.20 *U*	2,830	8,810 *J*	4,000	8,250
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	66.4	0.20 *U*	4,780	2,170 *J*	1,310	2,050
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	48.3	0.60	999	1,310 *J*	565	1,030
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	210	0.90	3,830	2,360 *J*	978	113
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	17.5	0.20 *J*	243	349 *J*	378	44.7
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	280	1.0	6,970	3,630 *J*	1,740	162

Note: Rmarsh - marsh reference zone
Rriver - river reference zone
SEM - simultaneously extracted metals
J - estimated
U - undetected at detection limit shown
R - rejected

Table C-6. Conventional parameter results for river and marsh sediment

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	Acid-Volatile Sulfide (mg/kg dry)	Total Organic Carbon (% dry)	pH (pH wet)	Percent Silt (% dry)	Percent Clay (% dry)	Total Solids (dry wt. as percent of wet wt. or volume) (% wet)	Phi Class 3.00+ to –2.00 (% dry)
River													
1	river	SD0025	10/5/2004	0	0	6	100	1.6	7.5	8.4	4.1	65.3	21
2	river	SD0024	10/5/2004	0	0	6	84	3.9	7.7	38	14	49.8	3.4
3	river	SD0023	10/5/2004	0	0	6	5,700	6.1	7.6	57	12	24.7	0
4	river	SD0022	10/5/2004	0	0	6	280	5.8	7.1	65	21	34.3	0
5	river	SD0008	10/1/2004	0	0	6	770	2.1	7.4	48	21	58.4	8.1
6	river	SD0009	10/1/2004	0	0	6	980	1.8	7.7	32	5.1	61.5	7.5
7R	river	SD0034	10/6/2004	0	0	6	42	0.74	7.7	7.1	3.6	74.1	8.5
8	river	SD0010	10/1/2004	1	0	6	700	2.3	7.5	44	13	53.3	3.7 *J*
8	river	SD0011	10/1/2004	2	0	6	910	2.4	7.6	49	16	49.6	1.8 *J*
9	river	SD0012	10/1/2004	0	0	6	110	1.5	7.4	36	48	58.9	0.54 *J*
10	river	SD0033	10/6/2004	0	0	6	2.4	1.4	7.6	35	21	60.5	0
Marsh													
12	marsh	SD0016	10/4/2004	0	0	6	680	8.9	6.7	53	17	24.4	7.2
13	marsh	SD0019	10/4/2004	0	0	6	1.0 *U*	8.3	6.8	43	26	48.7	0
14	marsh	SD0020	10/4/2004	0	0	6	3.7	14	6.2	29	21	22.3	3.5
16	marsh	SD0007	9/29/2004	0	0	6	1.0 *U*	2.5	6.5	61	22	71.6	0
17	marsh	SD0017	10/4/2004	1	0	6	1.0 *U*	22	6.4	30	13	23.2	0.58
17	marsh	SD0018	10/4/2004	2	0	6	1.0 *U*	19	6.4	32	16	23.1	1.1
19	marsh	SD0005	9/29/2004	0	0	6	1.0 *U*	11	4.9	35	35	27.7	4.8
11A	upland	SD0006	9/29/2004	0	0	6	1.0 *U*	1.7	6.8	33	21	81.1	2.8
13A	upland	SD0002	9/28/2004	0	0	6	1.0 *U*	1.4	5.3	6.8	2.3	87.7	2.0
18A	upland	SD0004	9/28/2004	0	0	6	1.0 *U*	2.4	4.1	29	6.2	84.6	0.71
22	upland	SD0003	9/28/2004	0	0	6	1.0 *U*	2.5	7.2	37	20	80.5	16
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	45	2.6	7.9	29	25	49.8	0
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	27	5.0	6.5	70	18	45.6	0.93
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	490	7.1	6.8	52	27	28.5	2.3
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	160	0.97	7.0	17	9.8	65.7	13
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	33	0.60	7.7	3.1	2.1	74.5	29
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	1.0 *U*	8.8	5.3	32	10	66.6	0.54
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	1.0 *U*	4.9	3.7	29	14	62.3	0
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	1.0 *U*	7.8	6.8	34	16	50.5	0.86

Table C-6. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Upper Depth (in)	Lower Depth (in)	Phi Class 2.00+ to –1.00 (% dry)	Phi Class 1.00+ to 0.00 (% dry)	Phi Class 0.00+ to 1.00 (% dry)	Phi Class 1.00+ to 2.00 (% dry)	Phi Class 2.00+ to 3.00 (% dry)	Phi Class 3.00+ to 4.00 (% dry)
River												
1	river	SD0025	10/5/2004	0	0	6	4.7	9.9	26	12	9.3	0.85
2	river	SD0024	10/5/2004	0	0	6	1.4	4.0	9.3	14	14	1.6
3	river	SD0023	10/5/2004	0	0	6	1.4	4.2	4.4	5.0	12	2.4
4	river	SD0022	10/5/2004	0	0	6	0.70	2.9	2.6	3.2	5.5	1.8
5	river	SD0008	10/1/2004	0	0	6	2.9	4.2	3.8	5.1	5.8	2.3
6	river	SD0009	10/1/2004	0	0	6	7.2	8.6	9.8	13	15	1.9
7R	river	SD0034	10/6/2004	0	0	6	7.6	8.5	11	20	32	2.1
8	river	SD0010	10/1/2004	1	0	6	1.9	4.0 *J*	4.0	4.6	16	6.0
8	river	SD0011	10/1/2004	2	0	6	1.7	2.3 *J*	3.4	4.6	15	5.8
9	river	SD0012	10/1/2004	0	0	6	0.90	1.0	0.66	0.89	6.5	3.6
10	river	SD0033	10/6/2004	0	0	6	0.78	2.8	3.2	6.4	26	4.7
Marsh												
12	marsh	SD0016	10/4/2004	0	0	6	7.2	5.9	3.2	2.4	2.8	0.89
13	marsh	SD0019	10/4/2004	0	0	6	2.0	4.8	6.4	5.6	9.1	3.8
14	marsh	SD0020	10/4/2004	0	0	6	15	13	7.1	4.2	4.2	1.1
16	marsh	SD0007	9/29/2004	0	0	6	1.4	3.3	2.5	2.1	3.7	2.3
17	marsh	SD0017	10/4/2004	1	0	6	2.9	11	14	13	13	3.6
17	marsh	SD0018	10/4/2004	2	0	6	4.4	8.5	11	12	14	3.9
19	marsh	SD0005	9/29/2004	0	0	6	8.9	6.5	3.8	2.1	2.3	0.56
11A	upland	SD0006	9/29/2004	0	0	6	4.2	5.0	7.2	5.8	13	4.7
13A	upland	SD0002	9/28/2004	0	0	6	2.3	7.4	25	27	26	2.4
18A	upland	SD0004	9/28/2004	0	0	6	5.8	10	9.2	9.0	22	7.4
22	upland	SD0003	9/28/2004	0	0	6	5.5	4.8	4.2	4.2	8.9	3.1
AQUAREF1	Rriver	SD0026	10/5/2004	0	0	6	0.91	3.0	7.5	14	20	1.7
AQUAREF2	Rriver	SD0013	10/4/2004	0	0	6	3.0	1.9	1.2	1.2	2.4	1.2
AQUAREF3	Rriver	SD0014	10/4/2004	0	0	6	4.9	5.4	2.9	1.8	2.0	0.45
AQUAREF4	Rriver	SD0032	10/6/2004	0	0	6	3.1	3.1	7.5	18	26	2.7
AQUAREF5	Rriver	SD0031	10/6/2004	0	0	6	5.9	4.6	17	28	9.3	0.48
TERRREF1	Rmarsh	SD0001	9/28/2004	0	0	6	1.6	9.6	17	11	13	3.2
TERRREF2	Rmarsh	SD0015	10/4/2004	0	0	6	1.8	3.5	7.5	15	26	4.9
TERRREF3	Rmarsh	SD0021	10/4/2004	0	0	6	2.4	11	11	9.6	15	3.0

Note: Rmarsh - marsh reference zone
Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table C-7. Semivolatile organic compound results for marsh vegetation

Station	Zone	Sample Number	Date	Field Replicate	2,4,5-Trichlorophenol (µg/kg wet)	2,4,6-Trichlorophenol (µg/kg wet)	2,4-Dichlorophenol (µg/kg wet)	2,4-Dimethylphenol (µg/kg wet)	2,4-Dinitrophenol (µg/kg wet)	2,4-Dinitrotoluene (µg/kg wet)	2,6-Dinitrotoluene (µg/kg wet)
11A	upland	PH0006	10/5/2004	0	11 *U*	10 *J*	12 *U*	13 *U*	23 *U*	8.5 *U*	7.0 *U*
13	marsh	PH0003	10/5/2004	0	11 *U*	8.8 *U*	12 *U*	13 *U*	23 *U*	8.5 *U*	7.0 *U*
13A	upland	PH0004	10/5/2004	0	11 *U*	8.8 *U*	12 *U*	13 *U*	23 *U*	8.5 *U*	7.0 *U*
14	marsh	PH0001	10/5/2004	1	17 *J*	13 *U*	17 *U*	19 *U*	33 *U*	12 *U*	9.8 *U*
14	marsh	PH0002	10/5/2004	2	11 *U*	8.8 *U*	12 *U*	13 *U*	23 *U*	8.5 *U*	7.0 *U*
22	upland	PH0007	10/5/2004	0	11 *U*	8.8 *U*	12 *U*	13 *U*	23 *U*	8.5 *U*	7.0 *U*
TERRREF1	Rmarsh	PH0005	10/5/2004	0	11 *U*	8.8 *U*	12 *U*	13 *U*	23 *U*	8.5 *U*	7.0 *U*

Station	Zone	Sample Number	Date	Field Replicate	2-Chloro-naphthalene (µg/kg wet)	2-Chlorophenol (µg/kg wet)	2-Methyl-4,6-dinitrophenol (µg/kg wet)	2-Methyl-naphthalene (µg/kg wet)	2-Methylphenol (µg/kg wet)	2-Nitroaniline (µg/kg wet)	2-Nitrophenol (µg/kg wet)
11A	upland	PH0006	10/5/2004	0	5.9 *U*	11 *U*	15 *U*	1.5 *U*	53 *U*	26 *U*	15 *U*
13	marsh	PH0003	10/5/2004	0	5.9 *U*	11 *U*	15 *U*	2.4 *U*	53 *U*	26 *U*	15 *U*
13A	upland	PH0004	10/5/2004	0	5.9 *U*	11 *U*	15 *U*	2.7 *U*	53 *U*	26 *U*	15 *U*
14	marsh	PH0001	10/5/2004	1	8.3 *U*	16 *U*	21 *U*	1.0 *U*	75 *U*	37 *U*	21 *U*
14	marsh	PH0002	10/5/2004	2	5.9 *U*	11 *U*	15 *U*	1.0 *U*	53 *U*	26 *U*	15 *U*
22	upland	PH0007	10/5/2004	0	5.9 *U*	11 *U*	15 *U*	4.2 *U*	53 *U*	26 *U*	15 *U*
TERRREF1	Rmarsh	PH0005	10/5/2004	0	5.9 *U*	11 *U*	15 *U*	1.5 *U*	53 *U*	26 *U*	15 *U*

Table C-7. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	3,3'-Dichloro-benzidine (µg/kg wet)	3-Nitroaniline (µg/kg wet)	4-Bromophenyl ether (µg/kg wet)	4-Chloro-3-methylphenol (µg/kg wet)	4-Chloroaniline (µg/kg wet)	4-Chlorophenyl-phenyl ether (µg/kg wet)	4-Methylphenol (µg/kg wet)
11A	upland	PH0006	10/5/2004	0	780 *U*	8.9 *U*	5.5 *U*	72 *U*	5.9 *U*	4.5 *U*	15 *U*
13	marsh	PH0003	10/5/2004	0	780 *U*	8.9 *U*	5.5 *U*	110 *U*	5.9 *U*	4.5 *U*	15 *U*
13A	upland	PH0004	10/5/2004	0	780 *U*	8.9 *U*	5.5 *U*	72 *U*	5.9 *U*	4.5 *U*	15 *U*
14	marsh	PH0001	10/5/2004	1	1,100 *U*	13 *U*	7.7 *U*	180 *U*	8.3 *U*	6.3 *U*	29 *J*
14	marsh	PH0002	10/5/2004	2	780 *U*	8.9 *U*	5.5 *U*	110 *U*	5.9 *U*	4.5 *U*	15 *U*
22	upland	PH0007	10/5/2004	0	780 *U*	8.9 *U*	5.5 *U*	72 *U*	5.9 *U*	4.5 *U*	15 *U*
TERRREF1	Rmarsh	PH0005	10/5/2004	0	780 *U*	8.9 *U*	5.5 *U*	72 *U*	5.9 *U*	4.5 *U*	15 *U*

Station	Zone	Sample Number	Date	Field Replicate	4-Nitroaniline (µg/kg wet)	4-Nitrophenol (µg/kg wet)	Acenaphthene (µg/kg wet)	Acenaph-thylene (µg/kg wet)	Acetophenone (µg/kg wet)	Anthracene (µg/kg wet)	Atrazine (µg/kg wet)
11A	upland	PH0006	10/5/2004	0	26 *U*	7.5 *U*	0.71 *J*	2.4 *J*	21 *J*	2.6 *J*	5.5 *U*
13	marsh	PH0003	10/5/2004	0	26 *U*	20 *U*	0.60 *J*	1.6 *J*	24 *J*	2.1 *J*	5.5 *U*
13A	upland	PH0004	10/5/2004	0	26 *U*	7.5 *U*	0.65 *J*	1.3 *J*	24 *J*	2.2 *J*	5.5 *U*
14	marsh	PH0001	10/5/2004	1	37 *U*	130 *J*	0.42 *J*	0.94 *J*	38 *J*	1.3 *J*	7.7 *U*
14	marsh	PH0002	10/5/2004	2	26 *U*	7.5 *U*	0.43 *J*	1.2 *J*	31 *J*	1.7 *J*	5.5 *U*
22	upland	PH0007	10/5/2004	0	26 *U*	7.5 *U*	0.39 *J*	1.5 *J*	39 *J*	1.5 *J*	5.5 *U*
TERRREF1	Rmarsh	PH0005	10/5/2004	0	26 *U*	7.5 *U*	0.33 *J*	0.94 *J*	30 *J*	1.3 *J*	5.5 *U*

Table C-7. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Benz[a]-anthracene (µg/kg wet)	Benzaldehyde (µg/kg wet)	Benzo[a]pyrene (µg/kg wet)	Benzo[b]-fluoranthene (µg/kg wet)	Benzo[ghi]-perylene (µg/kg wet)	Benzo[k]-fluoranthene (µg/kg wet)	Biphenyl (µg/kg wet)
11A	upland	PH0006	10/5/2004	0	10	730 *UJ*	15	16	15	19	4.7 *U*
13	marsh	PH0003	10/5/2004	0	9.0	730 *UJ*	11	12	8.9	12	4.7 *U*
13A	upland	PH0004	10/5/2004	0	14	730 *UJ*	17	25	16	25	4.7 *U*
14	marsh	PH0001	10/5/2004	1	4.6 *J*	1,100 *UJ*	5.9 *J*	7.2	5.5 *J*	8.5	6.6 *U*
14	marsh	PH0002	10/5/2004	2	5.5	730 *UJ*	7.6	9.2	6.7	11	4.7 *U*
22	upland	PH0007	10/5/2004	0	4.7 *J*	730 *UJ*	7.5	8.4	13	8.9	5.2 *J*
TERRREF1	Rmarsh	PH0005	10/5/2004	0	4.7 *J*	730 *UJ*	5.4	5.9	4.5 *J*	6.8	4.7 *U*

Station	Zone	Sample Number	Date	Field Replicate	Bis[2-chloroethoxy]-methane (µg/kg wet)	Bis[2-chloroethyl]-ether (µg/kg wet)	Bis[2-chloroisopropyl]-ether (µg/kg wet)	Bis[2-Ethylhexyl]-phthalate (µg/kg wet)	Butylbenzyl phthalate (µg/kg wet)	Caprolactam (µg/kg wet)	Carbazole (µg/kg wet)
11A	upland	PH0006	10/5/2004	0	5.0 *U*	8.7 *U*	11 *U*	53 *U*	14 *U*	13 *U*	33 *U*
13	marsh	PH0003	10/5/2004	0	5.0 *U*	8.7 *U*	11 *U*	53 *U*	14 *U*	13 *U*	33 *U*
13A	upland	PH0004	10/5/2004	0	5.0 *U*	8.7 *U*	11 *U*	53 *U*	14 *U*	13 *U*	33 *U*
14	marsh	PH0001	10/5/2004	1	7.0 *U*	13 *U*	16 *U*	75 *U*	20 *U*	19 *U*	47 *U*
14	marsh	PH0002	10/5/2004	2	5.0 *U*	8.7 *U*	11 *U*	53 *U*	14 *U*	13 *U*	33 *U*
22	upland	PH0007	10/5/2004	0	5.0 *U*	8.7 *U*	11 *U*	400 *U*	14 *U*	13 *U*	33 *U*
TERRREF1	Rmarsh	PH0005	10/5/2004	0	5.0 *U*	8.7 *U*	11 *U*	90 *J*	14 *U*	13 *U*	33 *U*

Table C-7. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Chrysene (µg/kg wet)	Dibenz[a,h]-anthracene (µg/kg wet)	Dibenzofuran (µg/kg wet)	Diethyl phthalate (µg/kg wet)	Dimethyl phthalate (µg/kg wet)	Di-*n*-butyl phthalate (µg/kg wet)	Di-*n*-octyl phthalate (µg/kg wet)
11A	upland	PH0006	10/5/2004	0	15	3.3 *J*	0.80 *J*	9.4 *U*	5.1 *U*	140 *U*	13 *U*
13	marsh	PH0003	10/5/2004	0	14	2.4 *J*	1.1 *J*	9.4 *U*	5.1 *U*	140 *U*	13 *U*
13A	upland	PH0004	10/5/2004	0	26	3.7 *J*	1.1 *J*	9.4 *U*	5.1 *U*	140 *U*	13 *U*
14	marsh	PH0001	10/5/2004	1	7.1	1.2 *J*	0.55 *U*	14 *U*	7.2 *U*	200 *U*	19 *U*
14	marsh	PH0002	10/5/2004	2	10	2.3 *J*	0.60 *U*	9.4 *U*	5.1 *U*	140 *U*	13 *U*
22	upland	PH0007	10/5/2004	0	6.8	2.9 *J*	0.75 *J*	9.4 *U*	5.1 *U*	490 *U*	13 *U*
TERRREF1	Rmarsh	PH0005	10/5/2004	0	6.5	1.9 *J*	0.53 *U*	9.4 *U*	5.1 *U*	140 *U*	13 *U*

Station	Zone	Sample Number	Date	Field Replicate	Fluoranthene (µg/kg wet)	Fluorene (µg/kg wet)	Hexachloro-benzene (µg/kg wet)	Hexachloro-butadiene (µg/kg wet)	Hexachloro-cyclopenta-diene (µg/kg wet)	Hexachloro-ethane (µg/kg wet)	Indeno[1,2,3-cd]pyrene (µg/kg wet)
11A	upland	PH0006	10/5/2004	0	27	0.94 *J*	5.9 *U*	8.5 *U*	5,000 *U*	8.5 *U*	17
13	marsh	PH0003	10/5/2004	0	22	0.82 *J*	5.9 *U*	8.5 *U*	5,000 *U*	8.5 *U*	11
13A	upland	PH0004	10/5/2004	0	40	0.77 *J*	5.9 *U*	8.5 *U*	5,000 *U*	8.5 *U*	20
14	marsh	PH0001	10/5/2004	1	11	0.53 *J*	8.3 *U*	12 *U*	7,000 *U*	12 *U*	6.6 *J*
14	marsh	PH0002	10/5/2004	2	15	0.66 *J*	5.9 *U*	8.5 *U*	5,000 *U*	8.5 *U*	8.1
22	upland	PH0007	10/5/2004	0	9.8	0.57 *J*	5.9 *U*	8.5 *U*	5,000 *U*	8.5 *U*	9.2
TERRREF1	Rmarsh	PH0005	10/5/2004	0	12	0.54 *U*	5.9 *U*	8.5 *U*	5,000 *U*	8.5 *U*	4.7 *J*

Table C-7. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Isophorone (µg/kg wet)	Naphthalene (µg/kg wet)	Nitrobenzene (µg/kg wet)	*N*-nitroso-di-*n*-propylamine (µg/kg wet)	*N*-nitrosodiphenyl-amine (µg/kg wet)
11A	upland	PH0006	10/5/2004	0	5.8 *U*	6.2 *U*	10 *U*	8.2 *U*	9.5 *U*
13	marsh	PH0003	10/5/2004	0	5.8 *U*	6.9 *U*	10 *U*	8.2 *U*	9.5 *U*
13A	upland	PH0004	10/5/2004	0	5.8 *U*	7.3 *U*	10 *U*	8.2 *U*	9.5 *U*
14	marsh	PH0001	10/5/2004	1	8.2 *U*	6.7 *U*	14 *U*	12 *U*	14 *U*
14	marsh	PH0002	10/5/2004	2	5.8 *U*	5.0 *U*	10 *U*	8.2 *U*	9.5 *U*
22	upland	PH0007	10/5/2004	0	58	6.7 *U*	10 *U*	8.2 *U*	40
TERRREF1	Rmarsh	PH0005	10/5/2004	0	5.8 *U*	5.6 *U*	10 *U*	8.2 *U*	9.5 *U*

Station	Zone	Sample Number	Date	Field Replicate	Pentachloro-phenol (µg/kg wet)	Phenanthrene (µg/kg wet)	Phenol (µg/kg wet)	Pyrene (µg/kg wet)	Total PAHs (µg/kg wet)
11A	upland	PH0006	10/5/2004	0	31 *U*	11	40 *J*	21	180 *J*
13	marsh	PH0003	10/5/2004	0	190 *U*	12	31 *J*	19	140 *J*
13A	upland	PH0004	10/5/2004	0	31 *U*	14	32 *J*	29	240 *J*
14	marsh	PH0001	10/5/2004	1	360 *U*	4.5 *J*	65 *J*	10	78 *J*
14	marsh	PH0002	10/5/2004	2	200 *U*	5.7	49 *J*	13	99 *J*
22	upland	PH0007	10/5/2004	0	31 *U*	5.5	170	12	95 *J*
TERRREF1	Rmarsh	PH0005	10/5/2004	0	31 *U*	5.5	17 *U*	10	72 *J*

Note: Marsh vegetation samples contained live tuberous roots and basal stems of *Phragmites*.

PAH - polycyclic aromatic hydrocarbon
Rmarsh - marsh reference zone
J - estimated
U - undetected at detection limit shown

Table C-8. Pesticide/PCB results for marsh vegetation

Station	Zone	Sample Number	Date	Field Replicate	4,4'-DDD (µg/kg wet)	4,4'-DDE (µg/kg wet)	4,4'-DDT (µg/kg wet)	Aldrin (µg/kg wet)	α-Chlordane (µg/kg wet)	α-Endosulfan (µg/kg wet)	α-Hexachloro-cyclohexane (µg/kg wet)	β-Endosulfan (µg/kg wet)
11A	upland	PH0006	10/5/2004	0	1.1 *U*	1.1 *U*	0.39 *U*	1.1 *U*	0.37 *U*	0.48 *U*	0.25 *J*	0.36 *U*
13	marsh	PH0003	10/5/2004	0	2.4 *J*	2.1 *J*	6.5	2.9 *J*	0.37 *U*	1.7 *J*	0.17 *U*	0.74 *U*
13A	upland	PH0004	10/5/2004	0	1.1 *U*	1.1 *U*	2.0 *J*	6.5 *U*	0.37 *U*	0.92 *U*	0.41 *U*	1.1 *U*
14	marsh	PH0001	10/5/2004	1	1.3 *U*	2.3 *J*	1.1 *U*	1.1 *U*	0.37 *U*	0.83 *U*	0.17 *U*	1.2 *J*
14	marsh	PH0002	10/5/2004	2	1.1 *U*	1.1 *U*	1.1 *U*	1.1 *U*	0.37 *U*	2.1 *J*	0.17 *U*	0.65 *U*
22	upland	PH0007	10/5/2004	0	1.4 *U*	1.0 *U*	1.1 *U*	2.7 *U*	2.0 *U*	1.3 *U*	1.0 *U*	1.5 *U*
TERRREF1	Rmarsh	PH0005	10/5/2004	0	2.2 *U*	0.12 *U*	2.2 *J*	1.8	0.85 *J*	2.4 *J*	0.42 *U*	0.35 *U*

Station	Zone	Sample Number	Date	Field Replicate	β-Hexachloro-cyclohexane (µg/kg wet)	δ-Hexachloro-cyclohexane (µg/kg wet)	Dieldrin (µg/kg wet)	Endosulfan Sulfate (µg/kg wet)	Endrin (µg/kg wet)	Endrin Aldehyde (µg/kg wet)	Endrin Ketone (µg/kg wet)	γ-Chlordane (µg/kg wet)
11A	upland	PH0006	10/5/2004	0	1.1 *U*	0.35 *U*	1.4 *U*	0.28 *U*	0.10 *U*	0.60 *J*	0.30 *U*	1.1 *J*
13	marsh	PH0003	10/5/2004	0	0.22 *U*	0.35 *U*	0.91 *U*	0.28 *U*	1.8 *U*	0.21 *U*	0.30 *U*	0.78 *J*
13A	upland	PH0004	10/5/2004	0	1.1 *U*	1.1 *U*	1.3 *U*	0.28 *U*	0.74 *U*	0.18 *U*	0.58 *U*	1.1 *U*
14	marsh	PH0001	10/5/2004	1	1.1 *U*	0.35 *U*	0.82 *U*	2.5 *U*	0.10 *U*	0.35 *U*	0.50 *J*	0.15 *U*
14	marsh	PH0002	10/5/2004	2	1.1 *U*	0.35 *U*	0.77 *U*	0.28 *U*	0.10 *U*	0.22 *U*	0.30 *U*	0.72 *J*
22	upland	PH0007	10/5/2004	0	1.0 *U*	3.4 *J*	3.6 *U*	1.9 *U*	8.7 *U*	1.0 *U*	4.4 *U*	31 *J*
TERRREF1	Rmarsh	PH0005	10/5/2004	0	1.0 *U*	0.34 *U*	0.57 *U*	1.0 *U*	1.0 *U*	0.17 *U*	0.29 *U*	1.1 *J*

Table C-8. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	γ-Hexachloro-cyclohexane (µg/kg wet)	Heptachlor (µg/kg wet)	Heptachlor Epoxide (µg/kg wet)	Methoxychlor (µg/kg wet)	Toxaphene (µg/kg wet)	Aroclor® 1016 (µg/kg wet)	Aroclor® 1221 (µg/kg wet)
11A	upland	PH0006	10/5/2004	0	0.48 *U*	0.46 *U*	0.50 *J*	3.1 *U*	33 *U*	2.1 *U*	3.2 *U*
13	marsh	PH0003	10/5/2004	0	0.60 *U*	0.46 *U*	0.26 *U*	0.28 *U*	29 *U*	2.1 *U*	3.2 *U*
13A	upland	PH0004	10/5/2004	0	1.8 *J*	0.46 *U*	1.1 *U*	0.30 *U*	34 *U*	2.1 *U*	3.2 *U*
14	marsh	PH0001	10/5/2004	1	1.2 *U*	0.46 *U*	0.77 *J*	0.54 *U*	44 *U*	2.1 *U*	3.2 *U*
14	marsh	PH0002	10/5/2004	2	0.29 *U*	0.46 *U*	0.67 *U*	0.28 *U*	34 *U*	2.1 *U*	3.2 *U*
22	upland	PH0007	10/5/2004	0	2.1	1.0 *U*	7.0 *U*	9.4	230 *U*	2.0 *U*	3.1 *U*
TERRREF1	Rmarsh	PH0005	10/5/2004	0	1.4	0.45 *U*	1.0 *U*	1.0 *U*	63 *U*	2.0 *U*	3.1 *U*

Station	Zone	Sample Number	Date	Field Replicate	Aroclor® 1232 (µg/kg wet)	Aroclor® 1242 (µg/kg wet)	Aroclor® 1248 (µg/kg wet)	Aroclor® 1254 (µg/kg wet)	Aroclor® 1260 (µg/kg wet)	PCBs (µg/kg wet)
11A	upland	PH0006	10/5/2004	0	2.1 *U*	3.6 *U*	0.77 *U*	28	4.8 *U*	28
13	marsh	PH0003	10/5/2004	0	2.1 *U*	3.6 *U*	0.77 *U*	17	4.8 *U*	17
13A	upland	PH0004	10/5/2004	0	2.1 *U*	3.6 *U*	0.77 *U*	9.2 *J*	4.8 *U*	9.2 *J*
14	marsh	PH0001	10/5/2004	1	2.1 *U*	3.6 *U*	0.77 *U*	27	4.8 *U*	27
14	marsh	PH0002	10/5/2004	2	2.1 *U*	3.6 *U*	0.77 *U*	16	4.8 *U*	16
22	upland	PH0007	10/5/2004	0	2.0 *U*	3.5 *U*	700	660	4.7 *U*	1,400
TERRREF1	Rmarsh	PH0005	10/5/2004	0	2.0 *U*	3.5 *U*	0.76 *U*	16	4.7 *U*	16

Note: Marsh vegetation samples contained live tuberous roots and basal stems of *Phragmites*.

PCB - polychlorinated biphenyl
Rmarsh - marsh reference zone
J - estimated
U - undetected at detection limit shown

Table C-9. Inorganic chemical results for marsh vegetation

Station	Zone	Sample Number	Date	Field Replicate	Aluminum (mg/kg wet)	Antimony (mg/kg wet)	Arsenic (mg/kg wet)	Barium (mg/kg wet)	Beryllium (mg/kg wet)	Cadmium (mg/kg wet)	Chromium (mg/kg wet)
11A	upland	PH0006	10/5/2004	0	114 *J*	0.27 *J*	13.3 *J*	1.7 *J*	0.014	0.20 *J*	2.9
13	marsh	PH0003	10/5/2004	0	646 *J*	0.90 *J*	5.7 *J*	3.0 *J*	0.015	0.025 *J*	4.5
13A	upland	PH0004	10/5/2004	0	343 *J*	0.57 *J*	3.3 *J*	6.3 *J*	0.058	0.13 *J*	5.3
14	marsh	PH0001	10/5/2004	1	571 *J*	0.36 *J*	1.2 *J*	2.0 *J*	0.068	0.31 *J*	8.0
14	marsh	PH0002	10/5/2004	2	269 *J*	0.25 *J*	1.1 *J*	1.8 *J*	0.066	0.47 *J*	3.4
22	upland	PH0007	10/5/2004	0	426 *J*	0.91 *J*	5.3 *J*	8.6 *J*	0.030	0.63 *J*	31.5
TERRREF1	Rmarsh	PH0005	10/5/2004	0	337 *J*	0.22 *J*	2.1 *J*	3.6 *J*	0.047	0.13 *J*	3.2

Station	Zone	Sample Number	Date	Field Replicate	Cobalt (mg/kg wet)	Copper (mg/kg wet)	Iron (mg/kg wet)	Lead (mg/kg wet)	Manganese (mg/kg wet)	Mercury (mg/kg wet)	Nickel (mg/kg wet)
11A	upland	PH0006	10/5/2004	0	0.58 *J*	9.9 *J*	1,620	2.4 *J*	36.5	1.0 *J*	6.8 *J*
13	marsh	PH0003	10/5/2004	0	0.24 *J*	34.4 *J*	2,270	8.5 *J*	22.4	0.18 *J*	1.2 *J*
13A	upland	PH0004	10/5/2004	0	0.50 *J*	10 *J*	1,390	14.7 *J*	30.9	0.079 *J*	2.7 *J*
14	marsh	PH0001	10/5/2004	1	2.3 *J*	91.4 *J*	2,110	4.1 *J*	71.4	0.25 *J*	4.4 *J*
14	marsh	PH0002	10/5/2004	2	1.5 *J*	50.5 *J*	1,480	4.0 *J*	67.1	0.32 *J*	4.2 *J*
22	upland	PH0007	10/5/2004	0	1.2 *J*	63.6 *J*	3,990	20.1 *J*	33.7	1.6 *J*	5.8 *J*
TERRREF1	Rmarsh	PH0005	10/5/2004	0	0.64 *J*	12.2 *J*	1,090	8.7 *J*	83.8	0.045 *J*	2.2 *J*

Table C-9. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Selenium (mg/kg wet)	Silver (mg/kg wet)	Thallium (mg/kg wet)	Vanadium (mg/kg wet)	Zinc (mg/kg wet)
11A	upland	PH0006	10/5/2004	0	0.041	0.65	0.0091	0.98 *J*	14.8
13	marsh	PH0003	10/5/2004	0	0.39	0.51	0.0078	3.0 *J*	13.3
13A	upland	PH0004	10/5/2004	0	0.068	0.61	0.013	3.8 *J*	21.8
14	marsh	PH0001	10/5/2004	1	0.086	4.4	0.0082	1.9 *J*	32.3
14	marsh	PH0002	10/5/2004	2	0.042	3.9	0.0085	1.9 *J*	22.3
22	upland	PH0007	10/5/2004	0	0.097	0.65	0.015	0.48 *J*	27.3
TERRREF1	Rmarsh	PH0005	10/5/2004	0	0.093	0.15	0.013	2.8 *J*	16.2

Station	Zone	Sample Number	Date	Field Replicate	Calcium (mg/kg wet)	Magnesium (mg/kg wet)	Potassium (mg/kg wet)	Sodium (mg/kg wet)
11A	upland	PH0006	10/5/2004	0	271	128	4,390	126
13	marsh	PH0003	10/5/2004	0	458	315	2,450	115
13A	upland	PH0004	10/5/2004	0	282	286	1,470	186
14	marsh	PH0001	10/5/2004	1	224	393	1,060	1,190
14	marsh	PH0002	10/5/2004	2	137	274	1,020	1,050
22	upland	PH0007	10/5/2004	0	448	220	2,220	87.6
TERRREF1	Rmarsh	PH0005	10/5/2004	0	313	204	2,730	105

Note: Inorganic chemical results converted from dry-weight basis.

Marsh vegetation samples contained live tuberous roots and basal stems of *Phragmites*.

Rmarsh - marsh reference zone
J - estimated

Table C-10. Conventional parameter results for marsh vegetation

Station	Zone	Sample Number	Date	Field Replicate	Total Solids (dry wt. as percent of wet wt. or volume) (% wet)
11A	upland	PH0006	10/5/2004	0	33.8
13	marsh	PH0003	10/5/2004	0	40.9
13A	upland	PH0004	10/5/2004	0	52.5
14	marsh	PH0001	10/5/2004	1	35.7
14	marsh	PH0002	10/5/2004	2	38.6
22	upland	PH0007	10/5/2004	0	52.6
TERRREF1	Rmarsh	PH0005	10/5/2004	0	40.5

Note: Marsh vegetation samples contained live tuberous roots and basal stems of *Phragmites* .

Rmarsh - marsh reference zone

Table C-11. Pesticide/PCB results for marsh insects

Station	Zone	Sample Number	Date	Field Replicate	4,4'-DDD (µg/kg wet)	4,4'-DDE (µg/kg wet)	4,4'-DDT (µg/kg wet)	Aldrin (µg/kg wet)	α-Chlordane (µg/kg wet)	α-Endosulfan (µg/kg wet)	α-Hexachloro-cyclohexane (µg/kg wet)
REF	Ruplnd	TI0002	10/7/2004	0	4.7 *U*	2.1 *U*	2.4 *U*	0.41 *U*	1.0 *J*	2.1 *U*	0.33 *U*
SITE	upland	TI0001	10/7/2004	0	1.1 *U*	1.1 *U*	4.1	0.21 *U*	0.89 *J*	1.1 *U*	0.17 *U*

Station	Zone	Sample Number	Date	Field Replicate	β-Endosulfan (µg/kg wet)	β-Hexachloro-cyclohexane (µg/kg wet)	δ-Hexachloro-cyclohexane (µg/kg wet)	Dieldrin (µg/kg wet)	Endosulfan Sulfate (µg/kg wet)	Endrin (µg/kg wet)	Endrin Aldehyde (µg/kg wet)
REF	Ruplnd	TI0002	10/7/2004	0	2.1 *U*	0.43 *U*	0.70 *U*	2.1 *U*	0.67 *U*	2.1 *U*	1.6 *U*
SITE	upland	TI0001	10/7/2004	0	2.6 *U*	0.22 *U*	0.35 *U*	1.4 *J*	1.1 *U*	6.5 *U*	0.52 *U*

Table C-11. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Endrin Ketone (µg/kg wet)	γ-Chlordane (µg/kg wet)	γ-Hexachloro-cyclohexane (µg/kg wet)	Heptachlor (µg/kg wet)	Heptachlor Epoxide (µg/kg wet)	Methoxychlor (µg/kg wet)	Toxaphene (µg/kg wet)
REF	Ruplnd	TI0002	10/7/2004	0	1.9 *U*	2.1 *U*	0.57 *U*	0.92 *U*	2.1 *U*	2.1 *U*	230 *U*
SITE	upland	TI0001	10/7/2004	0	1.3 *U*	3.8 *J*	0.29 *U*	0.86 *J*	2.0	0.28 *U*	47 *U*

Station	Zone	Sample Number	Date	Field Replicate	Aroclor® 1016 (µg/kg wet)	Aroclor® 1221 (µg/kg wet)	Aroclor® 1232 (µg/kg wet)	Aroclor® 1242 (µg/kg wet)	Aroclor® 1248 (µg/kg wet)	Aroclor® 1254 (µg/kg wet)	Aroclor® 1260 (µg/kg wet)	PCBs (µg/kg wet)
REF	Ruplnd	TI0002	10/7/2004	0	4.1 *U*	6.4 *U*	4.1 *U*	7.2 *U*	1.6 *U*	3.1 *U*	9.6 *U*	9.6 *U*
SITE	upland	TI0001	10/7/2004	0	2.1 *U*	3.2 *U*	2.1 *U*	3.6 *U*	0.78 *U*	75	4.9 *U*	75

Note: PCB - polychlorinated biphenyl
Ruplnd - upland reference zone
J - estimated
U - undetected at detection limit shown

Table C-12. Inorganic chemical results for marsh insects

Station	Zone	Sample Number	Date	Field Replicate	Aluminum (mg/kg wet)	Antimony (mg/kg wet)	Arsenic (mg/kg wet)	Barium (mg/kg wet)	Beryllium (mg/kg wet)	Cadmium (mg/kg wet)	Chromium (mg/kg wet)
REF	Ruplnd	TI0002	10/7/2004	0	17.3	0.0062	0.065 *J*	1.4	0.0022 *U*	0.34	0.40
SITE	upland	TI0001	10/7/2004	0	89.9	0.022	0.59 *J*	1.2	0.0028	0.91	0.89

Station	Zone	Sample Number	Date	Field Replicate	Cobalt (mg/kg wet)	Copper (mg/kg wet)	Iron (mg/kg wet)	Lead (mg/kg wet)	Manganese (mg/kg wet)	Mercury (mg/kg wet)	Nickel (mg/kg wet)
REF	Ruplnd	TI0002	10/7/2004	0	0.027	22.6	41.9	0.19	9.4	0.019	0.24
SITE	upland	TI0001	10/7/2004	0	0.093	41.9	167	0.74	11.9	0.047	0.72

Table C-12. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Selenium (mg/kg wet)	Silver (mg/kg wet)	Thallium (mg/kg wet)	Vanadium (mg/kg wet)	Zinc (mg/kg wet)
REF	Ruplnd	TI0002	10/7/2004	0	0.21	0.078	0.00093	0.093 *J*	50.8 *J*
SITE	upland	TI0001	10/7/2004	0	0.20	0.53	0.0026	0.24 *J*	55.4 *J*

Station	Zone	Sample Number	Date	Field Replicate	Calcium (mg/kg wet)	Magnesium (mg/kg wet)	Potassium (mg/kg wet)	Sodium (mg/kg wet)
REF	Ruplnd	TI0002	10/7/2004	0	1,930	366	2,890	880
SITE	upland	TI0001	10/7/2004	0	1,870	342	2,610	771

Note: Ruplnd - upland reference zone
J - estimated
U - undetected at detection limit shown

Inorganic chemical results converted from dry-weight basis.

Table C-13. Conventional parameter results for marsh insects

Station	Zone	Sample Number	Date	Field Replicate	Lipid (% wet)	Total Solids (dry wt. as percent of wet wt. or volume) (% wet)
REF	Ruplnd	TI0002	10/7/2004	0	3.8	31.0
SITE	upland	TI0001	10/7/2004	0	3.6	28.4

Note: Ruplnd - upland reference zone

Table C-14. Semivolatile organic compound results for small mammals

Station	Zone	Sample Number	Date	Field Replicate	2,4,5-Trichlorophenol (µg/kg wet)	2,4,6-Trichlorophenol (µg/kg wet)	2,4-Dichlorophenol (µg/kg wet)	2,4-Dimethylphenol (µg/kg wet)	2,4-Dinitrophenol (µg/kg wet)	2,4-Dinitrotoluene (µg/kg wet)	2,6-Dinitrotoluene (µg/kg wet)
13A	upland	SM0002	9/28/2004	0	11 *U*	8.8 *U*	12 *U*	13 *U*	23 *U*	8.5 *U*	7.0 *U*
14A	marsh	SM0005	9/29/2004	0	11 *U*	8.8 *U*	12 *U*	13 *U*	23 *U*	8.5 *U*	7.0 *U*
22	upland	SM0004	9/28/2004	0	11 *U*	8.8 *U*	12 *U*	13 *U*	23 *U*	8.5 *U*	7.0 *U*
TERRREF1	Rmarsh	SM0001	9/28/2004	0	11 *U*	8.8 *U*	12 *U*	13 *U*	23 *U*	8.5 *U*	7.0 *U*

Station	Zone	Sample Number	Date	Field Replicate	2-Chloro-naphthalene (µg/kg wet)	2-Chlorophenol (µg/kg wet)	2-Methyl-4,6-dinitrophenol (µg/kg wet)	2-Methyl-naphthalene (µg/kg wet)	2-Methylphenol (µg/kg wet)	2-Nitroaniline (µg/kg wet)	2-Nitrophenol (µg/kg wet)
13A	upland	SM0002	9/28/2004	0	5.9 *U*	11 *U*	15 *U*	0.46 *U*	53 *U*	26 *U*	15 *U*
14A	marsh	SM0005	9/29/2004	0	5.9 *U*	11 *U*	15 *U*	0.81 *U*	53 *U*	26 *U*	15 *U*
22	upland	SM0004	9/28/2004	0	5.9 *U*	11 *U*	15 *U*	0.78 *U*	53 *U*	26 *U*	15 *U*
TERRREF1	Rmarsh	SM0001	9/28/2004	0	5.9 *U*	11 *U*	15 *U*	0.93 *U*	53 *U*	26 *U*	15 *U*

Table C-14. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	3,3'-Dichloro-benzidine (µg/kg wet)	3-Nitroaniline (µg/kg wet)	4-Bromophenyl ether (µg/kg wet)	4-Chloro-3-methylphenol (µg/kg wet)	4-Chloroaniline (µg/kg wet)	4-Chlorophenyl-phenyl ether (µg/kg wet)	4-Methylphenol (µg/kg wet)
13A	upland	SM0002	9/28/2004	0	780 *U*	8.9 *U*	5.5 *U*	98 *U*	5.9 *U*	4.5 *U*	230
14A	marsh	SM0005	9/29/2004	0	780 *U*	8.9 *U*	5.5 *U*	72 *U*	5.9 *U*	4.5 *U*	31 *J*
22	upland	SM0004	9/28/2004	0	780 *U*	8.9 *U*	5.5 *U*	72 *U*	5.9 *U*	4.5 *U*	15 *U*
TERRREF1	Rmarsh	SM0001	9/28/2004	0	780 *U*	8.9 *U*	5.5 *U*	100 *U*	5.9 *U*	4.5 *U*	190

Station	Zone	Sample Number	Date	Field Replicate	4-Nitroaniline (µg/kg wet)	4-Nitrophenol (µg/kg wet)	Acenaphthene (µg/kg wet)	Acenaph-thylene (µg/kg wet)	Acetophenone (µg/kg wet)	Anthracene (µg/kg wet)	Atrazine (µg/kg wet)
13A	upland	SM0002	9/28/2004	0	26 *U*	7.5 *U*	0.078 *U*	0.17 *U*	20 *J*	0.15 *U*	5.5 *U*
14A	marsh	SM0005	9/29/2004	0	26 *U*	7.5 *U*	0.12 *J*	0.17 *U*	20 *U*	0.059 *U*	720 *U*
22	upland	SM0004	9/28/2004	0	26 *U*	7.5 *U*	0.11 *J*	0.24 *U*	20 *U*	0.18 *U*	980 *U*
TERRREF1	Rmarsh	SM0001	9/28/2004	0	26 *U*	7.5 *U*	0.16 *J*	0.15 *U*	20 *J*	0.36 *U*	600 *U*

Table C-14. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Benz[a]-anthracene (µg/kg wet)	Benzaldehyde (µg/kg wet)	Benzo[a]-pyrene (µg/kg wet)	Benzo[b]-fluoranthene (µg/kg wet)	Benzo[ghi]-perylene (µg/kg wet)	Benzo[k]-fluoranthene (µg/kg wet)	Biphenyl (µg/kg wet)
13A	upland	SM0002	9/28/2004	0	0.057 *U*	730 *UJ*	0.081 *U*	0.048 *U*	0.11 *U*	0.086 *U*	4.7 *U*
14A	marsh	SM0005	9/29/2004	0	0.058 *U*	730 *UJ*	0.081 *U*	0.048 *U*	0.14 *J*	0.086 *U*	4.7 *U*
22	upland	SM0004	9/28/2004	0	0.057 *U*	730 *UJ*	0.081 *U*	0.048 *U*	0.11 *U*	0.086 *U*	4.7 *U*
TERRREF1	Rmarsh	SM0001	9/28/2004	0	0.69 *J*	730 *UJ*	0.081 *U*	0.048 *U*	0.24 *J*	0.086 *U*	4.7 *U*

Station	Zone	Sample Number	Date	Field Replicate	Bis[2-chloro-ethoxy]-methane (µg/kg wet)	Bis[2-chloroethyl]-ether (µg/kg wet)	Bis[2-chloroiso-propyl]ether (µg/kg wet)	Bis[2-Ethylhexyl]-phthalate (µg/kg wet)	Butylbenzyl phthalate (µg/kg wet)	Caprolactam (µg/kg wet)	Carbazole (µg/kg wet)
13A	upland	SM0002	9/28/2004	0	5.0 *U*	8.7 *U*	11 *U*	53 *U*	14 *U*	13 *U*	33 *U*
14A	marsh	SM0005	9/29/2004	0	5.0 *U*	8.7 *U*	11 *U*	53 *U*	14 *U*	13 *U*	33 *U*
22	upland	SM0004	9/28/2004	0	5.0 *U*	8.7 *U*	11 *U*	53 *U*	14 *U*	13 *U*	33 *U*
TERRREF1	Rmarsh	SM0001	9/28/2004	0	5.0 *U*	8.7 *U*	11 *U*	460 *U*	14 *U*	13 *U*	33 *U*

Table C-14. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Chrysene (µg/kg wet)	Dibenz[a,h]-anthracene (µg/kg wet)	Dibenzofuran (µg/kg wet)	Diethyl phthalate (µg/kg wet)	Dimethyl phthalate (µg/kg wet)	Di-*n*-butyl phthalate (µg/kg wet)	Di-*n*-octyl phthalate (µg/kg wet)
13A	upland	SM0002	9/28/2004	0	0.085 *U*	0.084 *U*	0.28 *U*	9.4 *U*	5.1 *U*	210 *U*	13 *U*
14A	marsh	SM0005	9/29/2004	0	0.085 *U*	0.084 *U*	0.16 *U*	9.4 *U*	5.1 *U*	16 *U*	13 *U*
22	upland	SM0004	9/28/2004	0	0.085 *U*	0.084 *U*	0.22 *U*	9.4 *U*	5.1 *U*	16 *U*	13 *U*
TERRREF1	Rmarsh	SM0001	9/28/2004	0	0.49 *J*	0.084 *U*	0.29 *U*	9.4 *U*	5.1 *U*	16 *U*	13 *U*

Station	Zone	Sample Number	Date	Field Replicate	Fluoranthene (µg/kg wet)	Fluorene (µg/kg wet)	Hexachloro-benzene (µg/kg wet)	Hexachloro-butadiene (µg/kg wet)	Hexachloro-cyclopenta-diene (µg/kg wet)	Hexachloro-ethane (µg/kg wet)	Indeno[1,2,3-cd]pyrene (µg/kg wet)
13A	upland	SM0002	9/28/2004	0	0.056 *U*	0.28 *U*	5.9 *U*	8.5 *U*	5,000 *U*	8.5 *U*	0.077 *U*
14A	marsh	SM0005	9/29/2004	0	0.056 *U*	0.058 *U*	5.9 *U*	8.5 *U*	5,000 *U*	8.5 *U*	0.078 *U*
22	upland	SM0004	9/28/2004	0	0.056 *U*	0.057 *U*	5.9 *U*	8.5 *U*	5,000 *U*	8.5 *U*	0.078 *U*
TERRREF1	Rmarsh	SM0001	9/28/2004	0	1.4 *J*	0.32 *U*	61	8.5 *U*	5,000 *U*	8.5 *U*	0.078 *U*

Table C-14. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Isophorone (µg/kg wet)	Naphthalene (µg/kg wet)	Nitrobenzene (µg/kg wet)	*N*-nitroso-di-*n*-propylamine (µg/kg wet)	*N*-nitroso-diphenylamine (µg/kg wet)
13A	upland	SM0002	9/28/2004	0	5.8 *U*	2.2 *U*	10 *U*	8.2 *U*	9.5 *U*
14A	marsh	SM0005	9/29/2004	0	5.8 *U*	5.5 *U*	10 *U*	8.2 *U*	9.5 *U*
22	upland	SM0004	9/28/2004	0	5.8 *U*	4.1 *U*	10 *U*	8.2 *U*	9.5 *U*
TERRREF1	Rmarsh	SM0001	9/28/2004	0	5.8 *U*	5.1 *U*	10 *U*	8.2 *U*	9.5 *U*

Station	Zone	Sample Number	Date	Field Replicate	Pentachloro-phenol (µg/kg wet)	Phenanthrene (µg/kg wet)	Phenol (µg/kg wet)	Pyrene (µg/kg wet)	Total PAHs (µg/kg wet)
13A	upland	SM0002	9/28/2004	0	31 *U*	0.64 *U*	730	0.074 *U*	4.7 *U*
14A	marsh	SM0005	9/29/2004	0	31 *U*	0.55 *U*	310	0.31 *U*	4.2 *J*
22	upland	SM0004	9/28/2004	0	31 *U*	0.66 *U*	560	0.36 *U*	3.6 *J*
TERRREF1	Rmarsh	SM0001	9/28/2004	0	31 *U*	1.2 *U*	890	0.93 *U*	7.6 *J*

Note: PAH - polycyclic aromatic hydrocarbon
Rmarsh - marsh reference zone
J - estimated
U - undetected at detection limit shown

Table C-15. Pesticide/PCB results for small mammals

Station	Zone	Sample Number	Date	Field Replicate	4,4'-DDD (µg/kg wet)	4,4'-DDE (µg/kg wet)	4,4'-DDT (µg/kg wet)	Aldrin (µg/kg wet)	α-Chlordane (µg/kg wet)	α-Endosulfan (µg/kg wet)	α-Hexachloro-cyclohexane (µg/kg wet)
11A	upland	SM0003	9/28/2004	0	0.27 *U*	1.3 *U*	1.9 *J*	0.41 *U*	0.73 *U*	0.27 *U*	0.33 *U*
13A	upland	SM0002	9/28/2004	0	0.13 *U*	0.51 *U*	2.4	0.20 *U*	0.51 *U*	0.59 *U*	0.16 *U*
14A	marsh	SM0005	9/29/2004	0	0.13 *U*	0.98 *U*	1.3	0.20 *U*	0.36 *U*	0.24 *U*	0.16 *U*
14A	marsh	SM0006	10/1/2004	0	1.0 *UJ*	0.47 *J*	1.4 *J*	0.20 *UJ*	0.36 *UJ*	0.13 *UJ*	0.16 *UJ*
22	upland	SM0004	9/28/2004	0	0.13 *U*	0.93 *J*	13 *J*	0.20 *U*	0.62 *U*	0.42 *J*	0.60 *U*
TERRREF1	Rmarsh	SM0001	9/28/2004	0	1.0 *U*	0.12 *U*	1.0	0.20 *U*	0.36 *U*	0.13 *U*	0.16 *U*

Station	Zone	Sample Number	Date	Field Replicate	β-Endosulfan (µg/kg wet)	β-Hexachloro-cyclohexane (µg/kg wet)	δ-Hexachloro-cyclohexane (µg/kg wet)	Dieldrin (µg/kg wet)	Endosulfan Sulfate (µg/kg wet)	Endrin (µg/kg wet)	Endrin Aldehyde (µg/kg wet)
11A	upland	SM0003	9/28/2004	0	0.94 *U*	0.43 *U*	0.69 *U*	28 *U*	0.55 *U*	2.1 *U*	0.35 *U*
13A	upland	SM0002	9/28/2004	0	0.35 *U*	0.21 *U*	0.34 *U*	1.0 *U*	0.27 *U*	1.0 *U*	0.17 *U*
14A	marsh	SM0005	9/29/2004	0	0.35 *U*	0.21 *U*	0.34 *U*	1.2 *U*	0.27 *U*	0.98 *U*	0.17 *U*
14A	marsh	SM0006	10/1/2004	0	0.35 *UJ*	0.21 *UJ*	0.53 *UJ*	1.0 *UJ*	0.27 *UJ*	1.0 *UJ*	1.0 *UJ*
22	upland	SM0004	9/28/2004	0	4.7 *U*	0.21 *U*	0.58 *U*	1.4 *U*	0.27 *U*	6.3 *U*	0.98 *U*
TERRREF1	Rmarsh	SM0001	9/28/2004	0	0.35 *U*	0.27 *J*	0.34 *U*	1.0 *U*	0.27 *U*	2.0 *U*	0.17 *U*

Table C-15. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Endrin Ketone (µg/kg wet)	γ-Chlordane (µg/kg wet)	γ-Hexachloro-cyclohexane (µg/kg wet)	Heptachlor (µg/kg wet)	Heptachlor Epoxide (µg/kg wet)	Methoxychlor (µg/kg wet)	Toxaphene (µg/kg wet)
11A	upland	SM0003	9/28/2004	0	0.59 *U*	0.32 *U*	0.57 *U*	0.92 *U*	1.2 *U*	2.1 *U*	110 *U*
13A	upland	SM0002	9/28/2004	0	0.29 *U*	0.65 *U*	0.28 *U*	0.45 *U*	0.70 *J*	1.0 *U*	58 *U*
14A	marsh	SM0005	9/29/2004	0	0.29 *U*	0.89 *U*	0.28 *U*	0.45 *U*	0.64 *U*	0.98 *U*	32 *U*
14A	marsh	SM0006	10/1/2004	0	0.29 *UJ*	0.14 *UJ*	0.28 *UJ*	0.45 *UJ*	0.29 *J*	1.0 *UJ*	21 *UJ*
22	upland	SM0004	9/28/2004	0	0.98 *U*	1.3 *U*	0.28 *U*	0.45 *U*	1.1	0.53 *U*	46 *U*
TERRREF1	Rmarsh	SM0001	9/28/2004	0	0.29 *U*	0.78 *U*	0.31 *U*	0.45 *U*	0.53 *J*	1.0 *U*	51 *U*

Station	Zone	Sample Number	Date	Field Replicate	Aroclor® 1016 (µg/kg wet)	Aroclor® 1221 (µg/kg wet)	Aroclor® 1232 (µg/kg wet)	Aroclor® 1242 (µg/kg wet)	Aroclor® 1248 (µg/kg wet)	Aroclor® 1254 (µg/kg wet)	Aroclor® 1260 (µg/kg wet)	PCBs (µg/kg wet)
11A	upland	SM0003	9/28/2004	0	4.1 *U*	6.3 *U*	4.1 *U*	7.1 *U*	1.6 *U*	8.2 *U*	17 *J*	17 *J*
13A	upland	SM0002	9/28/2004	0	2.0 *U*	3.1 *U*	2.0 *U*	3.5 *U*	0.76 *U*	13 *U*	31	31
14A	marsh	SM0005	9/29/2004	0	2.0 *U*	3.1 *U*	2.0 *U*	3.5 *U*	0.76 *U*	5.4 *U*	11 *J*	11 *J*
14A	marsh	SM0006	10/1/2004	0	2.0 *U*	3.1 *U*	2.0 *U*	3.5 *U*	0.76 *U*	3.2 *U*	13 *J*	13 *J*
22	upland	SM0004	9/28/2004	0	2.0 *U*	3.1 *U*	2.0 *U*	3.5 *U*	0.76 *U*	29 *U*	110	110
TERRREF1	Rmarsh	SM0001	9/28/2004	0	2.0 *U*	3.1 *U*	2.0 *U*	3.5 *U*	0.76 *U*	1.5 *U*	4.7 *U*	4.7 *U*

Note: PCB - polychlorinated biphenyl
Rmarsh - marsh reference zone
J - estimated
U - undetected at detection limit shown

Table C-16. Inorganic chemical results for small mammals

Station	Zone	Sample Number	Date	Field Replicate	Aluminum (mg/kg wet)	Antimony (mg/kg wet)	Arsenic (mg/kg wet)	Barium (mg/kg wet)	Beryllium (mg/kg wet)	Cadmium (mg/kg wet)	Chromium (mg/kg wet)
11A	upland	SM0003	9/28/2004	0	1,230	0.0069	0.27 *J*	1.2	0.0020 *U*	0.031	0.40
13A	upland	SM0002	9/28/2004	0	264	0.0047	0.053 *J*	2.0	0.0020 *U*	0.011	0.32
14A	marsh	SM0005	9/29/2004	0	122	0.0026	0.023 *J*	2.6	0.0020 *U*	0.017	0.26
14A	marsh	SM0006	10/1/2004	0	718	0.0027	0.084 *J*	2.5	0.0021 *U*	0.0075	0.21
22	upland	SM0004	9/28/2004	0	220	0.0053	0.088 *J*	2.6	0.0020 *U*	0.031	0.44
TERRREF1	Rmarsh	SM0001	9/28/2004	0	236	0.0030	0.055 *J*	3.0	0.0019 *U*	0.019	0.33

Station	Zone	Sample Number	Date	Field Replicate	Cobalt (mg/kg wet)	Copper (mg/kg wet)	Iron (mg/kg wet)	Lead (mg/kg wet)	Manganese (mg/kg wet)	Mercury (mg/kg wet)	Nickel (mg/kg wet)
11A	upland	SM0003	9/28/2004	0	0.053	4.2	83.2	0.21	15.5	0.019	0.73
13A	upland	SM0002	9/28/2004	0	0.033	9.7	81.2	0.75	5.8	0.0047	1.6
14A	marsh	SM0005	9/29/2004	0	0.083	2.7	72.7	0.18	5.1	0.0047	0.46
14A	marsh	SM0006	10/1/2004	0	0.042	4.3	76.8	0.19	11.4	0.0060	0.65
22	upland	SM0004	9/28/2004	0	0.044	3.3	64.8	0.27	4.4	0.018	0.65
TERRREF1	Rmarsh	SM0001	9/28/2004	0	0.032	3.6	66.6	0.21	4.9	0.0039	0.56

Table C-16. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Selenium (mg/kg wet)	Silver (mg/kg wet)	Thallium (mg/kg wet)	Vanadium (mg/kg wet)	Zinc (mg/kg wet)
11A	upland	SM0003	9/28/2004	0	0.38	0.042	0.0032	0.31	24.1 *J*
13A	upland	SM0002	9/28/2004	0	0.20	0.0041	0.00088	0.17	29.8 *J*
14A	marsh	SM0005	9/29/2004	0	0.19	0.0041	0.00088	0.13	24.6 *J*
14A	marsh	SM0006	10/1/2004	0	0.25	0.0051	0.00060	0.21	24.6 *J*
22	upland	SM0004	9/28/2004	0	0.25	0.012	0.00088	0.17	27.7 *J*
TERRREF1	Rmarsh	SM0001	9/28/2004	0	0.24	0.0041	0.0011	0.12	26.6 *J*

Station	Zone	Sample Number	Date	Field Replicate	Calcium (mg/kg wet)	Magnesium (mg/kg wet)	Potassium (mg/kg wet)	Sodium (mg/kg wet)
11A	upland	SM0003	9/28/2004	0	6,100	344	3,440	1,330
13A	upland	SM0002	9/28/2004	0	9,400	429	3,240	1,330
14A	marsh	SM0005	9/29/2004	0	10,200	464	3,330	1,430
14A	marsh	SM0006	10/1/2004	0	11,500	472	3,440	1,340
22	upland	SM0004	9/28/2004	0	16,400	502	2,980	1,420
TERRREF1	Rmarsh	SM0001	9/28/2004	0	8,910	415	3,410	1,390

Note: Rmarsh - marsh reference zone
J - estimated
U - undetected at detection limit shown

Inorganic chemical results converted from dry-weight basis.

Table C-17. Conventional parameter results for small mammal samples

Station	Zone	Sample Number	Date	Field Replicate	Lipid (% wet)	Total Solids (dry wt. as percent of wet wt. or volume) (% wet)
11A	upland	SM0003	9/28/2004	0	4.2	28.9
13A	upland	SM0002	9/28/2004	0	4.4	29.2
14A	marsh	SM0005	9/29/2004	0	3.5	29.2
14A	marsh	SM0006	10/1/2004	0	3.8	29.9
22	upland	SM0004	9/28/2004	0	3.5	29.2
TERRREF1	Rmarsh	SM0001	9/28/2004	0	3.1	27.5

Note: Rmarsh - marsh reference zone

Table C-18. Semivolatile organic compound results for river crabs

Station	Zone	Sample Number	Date	Field Replicate	2,4,5-Trichlorophenol (µg/kg wet)	2,4,6-Trichlorophenol (µg/kg wet)	2,4-Dichlorophenol (µg/kg wet)	2,4-Dimethylphenol (µg/kg wet)	2,4-Dinitrophenol (µg/kg wet)	2,4-Dinitrotoluene (µg/kg wet)	2,6-Dinitrotoluene (µg/kg wet)
6	river	CompStation6	10/1/2004	0	22 *U*	18 *U*	24 *U*	26 *U*	46 *U*	17 *U*	14 *U*
7R	river	CompStation7	10/6/2004	0	22 *U*	18 *U*	24 *U*	26 *U*	46 *U*	17 *U*	14 *U*
9	river	CompStation9	10/1/2004	0	22 *U*	18 *U*	24 *U*	26 *U*	46 *U*	17 *U*	14 *U*

Station	Zone	Sample Number	Date	Field Replicate	2-Chloro-naphthalene (µg/kg wet)	2-Chlorophenol (µg/kg wet)	2-Methyl-4,6-dinitrophenol (µg/kg wet)	2-Methyl-naphthalene (µg/kg wet)	2-Methylphenol (µg/kg wet)	2-Nitroaniline (µg/kg wet)	2-Nitrophenol (µg/kg wet)
6	river	CompStation6	10/1/2004	0	12 *U*	22 *U*	30 *U*	1.5 *J*	110 *U*	52 *U*	30 *U*
7R	river	CompStation7	10/6/2004	0	12 *U*	22 *U*	30 *U*	1.4 *J*	110 *U*	52 *U*	30 *U*
9	river	CompStation9	10/1/2004	0	12 *U*	22 *U*	30 *U*	1.2 *J*	110 *U*	52 *U*	30 *U*

Table C-18. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	3,3'-Dichloro-benzidine (µg/kg wet)	3-Nitroaniline (µg/kg wet)	4-Bromophenyl ether (µg/kg wet)	4-Chloro-3-methylphenol (µg/kg wet)	4-Chloroaniline (µg/kg wet)	4-Chlorophenyl-phenyl ether (µg/kg wet)	4-Methylphenol (µg/kg wet)
6	river	CompStation6	10/1/2004	0	1,600 *U*	18 *U*	11 *U*	150 *U*	12 *U*	8.9 *U*	30 *U*
7R	river	CompStation7	10/6/2004	0	1,600 *U*	18 *U*	11 *U*	150 *U*	12 *U*	9.0 *U*	30 *U*
9	river	CompStation9	10/1/2004	0	1,600 *U*	18 *U*	11 *U*	150 *U*	12 *U*	9.0 *U*	30 *U*

Station	Zone	Sample Number	Date	Field Replicate	4-Nitroaniline (µg/kg wet)	4-Nitrophenol (µg/kg wet)	Acenaphthene (µg/kg wet)	Acenaph-thylene (µg/kg wet)	Acetophenone (µg/kg wet)	Anthracene (µg/kg wet)	Atrazine (µg/kg wet)
6	river	CompStation6	10/1/2004	0	52 *U*	15 *U*	0.59 *J*	0.67 *J*	40 *U*	0.70 *J*	170 *U*
7R	river	CompStation7	10/6/2004	0	52 *U*	15 *U*	0.37 *J*	0.42 *J*	40 *U*	0.36 *U*	11 *U*
9	river	CompStation9	10/1/2004	0	52 *U*	15 *U*	0.40 *J*	0.55 *U*	42 *J*	0.50 *J*	11 *U*

Table C-18. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Benz[a]-anthracene (µg/kg wet)	Benzaldehyde (µg/kg wet)	Benzo[a]-pyrene (µg/kg wet)	Benzo[b]-fluoranthene (µg/kg wet)	Benzo[ghi]-perylene (µg/kg wet)	Benzo[k]-fluoranthene (µg/kg wet)	Biphenyl (µg/kg wet)
6	river	CompStation6	10/1/2004	0	1.3 *J*	1,500 *UJ*	0.90 *J*	0.98 *J*	0.81 *J*	0.94 *J*	9.3 *U*
7R	river	CompStation7	10/6/2004	0	1.2 *J*	1,500 *UJ*	0.75 *J*	1.0 *J*	0.73 *J*	0.86 *J*	9.4 *U*
9	river	CompStation9	10/1/2004	0	2.0 *J*	1,500 *UJ*	1.3 *J*	1.6 *J*	1.3 *J*	1.6 *J*	9.4 *U*

Station	Zone	Sample Number	Date	Field Replicate	Bis[2-chloroethoxy]-methane (µg/kg wet)	Bis[2-chloroethyl] ether (µg/kg wet)	Bis[2-chloroiso-propyl]ether (µg/kg wet)	Bis[2-Ethylhexyl]-phthalate (µg/kg wet)	Butylbenzyl phthalate (µg/kg wet)	Caprolactam (µg/kg wet)	Carbazole (µg/kg wet)
6	river	CompStation6	10/1/2004	0	9.9 *U*	18 *U*	22 *U*	140 *U*	28 *U*	26 *U*	65 *U*
7R	river	CompStation7	10/6/2004	0	10 *U*	18 *U*	22 *U*	110 *U*	28 *U*	26 *U*	66 *U*
9	river	CompStation9	10/1/2004	0	10 *U*	18 *U*	22 *U*	110 *U*	28 *U*	26 *J*	66 *U*

Table C-18. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Chrysene (µg/kg wet)	Dibenz[a,h]-anthracene (µg/kg wet)	Dibenzofuran (µg/kg wet)	Diethyl phthalate (µg/kg wet)	Dimethyl phthalate (µg/kg wet)	Di-*n*-butyl phthalate (µg/kg wet)	Di-*n*-octyl phthalate (µg/kg wet)
6	river	CompStation6	10/1/2004	0	1.4 *J*	0.46 *J*	0.40 *U*	19 *U*	11 *U*	670 *U*	26 *U*
7R	river	CompStation7	10/6/2004	0	1.1 *J*	0.18 *U*	0.35 *U*	19 *U*	11 *U*	360 *U*	26 *U*
9	river	CompStation9	10/1/2004	0	2.4 *J*	0.38 *J*	0.35 *U*	19 *U*	11 *U*	32 *U*	26 *U*

Station	Zone	Sample Number	Date	Field Replicate	Fluoranthene (µg/kg wet)	Fluorene (µg/kg wet)	Hexachloro-benzene (µg/kg wet)	Hexachloro-butadiene (µg/kg wet)	Hexachloro-cyclopenta-diene (µg/kg wet)	Hexachloro-ethane (µg/kg wet)	Indeno[1,2,3-cd]pyrene (µg/kg wet)
6	river	CompStation6	10/1/2004	0	2.1 *J*	0.43 *U*	12 *U*	17 *U*	9,900 *U*	17 *U*	0.90 *J*
7R	river	CompStation7	10/6/2004	0	2.1 *J*	0.37 *J*	12 *U*	17 *U*	10,000 *U*	17 *U*	0.77 *J*
9	river	CompStation9	10/1/2004	0	2.1 *J*	0.48 *U*	12 *U*	17 *U*	10,000 *U*	17 *U*	1.2 *J*

Table C-18. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Isophorone (µg/kg wet)	Naphthalene (µg/kg wet)	Nitrobenzene (µg/kg wet)	*N*-nitroso-di-*n*-propylamine (µg/kg wet)	*N*-nitroso-diphenylamine (µg/kg wet)
6	river	CompStation6	10/1/2004	0	12 *U*	11 *U*	20 *U*	17 *U*	19 *U*
7R	river	CompStation7	10/6/2004	0	12 *U*	9.5 *U*	20 *U*	17 *U*	19 *U*
9	river	CompStation9	10/1/2004	0	12 *U*	9.6 *U*	20 *U*	17 *U*	19 *U*

Station	Zone	Sample Number	Date	Field Replicate	Pentachloro-phenol (µg/kg wet)	Phenanthrene (µg/kg wet)	Phenol (µg/kg wet)	Pyrene (µg/kg wet)	Total PAHs (µg/kg wet)
6	river	CompStation6	10/1/2004	0	62 *U*	2.0 *U*	34 *U*	2.2 *J*	22 *J*
7R	river	CompStation7	10/6/2004	0	62 *U*	1.4 *U*	79 *J*	2.2 *J*	19 *J*
9	river	CompStation9	10/1/2004	0	62 *U*	1.6 *U*	36 *J*	2.2 *J*	24 *J*

Note: River crab samples were analyzed as whole body samples.

PAH - polycyclic aromatic hydrocarbon
J - estimated
U - undetected at detection limit shown

Table C-19. Pesticide/PCB results for river crabs

Station	Zone	Sample Number	Date	Field Replicate	4,4'-DDD (µg/kg wet)	4,4'-DDE (µg/kg wet)	4,4'-DDT (µg/kg wet)	Aldrin (µg/kg wet)	α-Chlordane (µg/kg wet)	α-Endosulfan (µg/kg wet)	α-Hexachloro-cyclohexane (µg/kg wet)
3	river	CompStation3	10/5/2004	0	13	19	5.6	0.21 *U*	0.57 *J*	3.9 *J*	0.17 *U*
6	river	CompStation6	10/1/2004	0	16	22	7.4	0.42 *U*	1.1 *J*	3.9	0.34 *U*
7R	river	CompStation7	10/6/2004	0	9.2	15	4.5	0.67 *U*	0.76 *U*	2.6 *J*	0.36 *U*
9	river	CompStation9	10/1/2004	0	4.3	5.9	2.8	0.42 *U*	0.76 *U*	0.97 *J*	0.34 *U*
10	river	CR0005	10/6/2004	0	8.0	19	6.2	0.42 *U*	0.74 *U*	3.5 *J*	0.33 *U*

Station	Zone	Sample Number	Date	Field Replicate	β-Endosulfan (µg/kg wet)	β-Hexachloro-cyclohexane (µg/kg wet)	δ-Hexachloro-cyclohexane (µg/kg wet)	Dieldrin (µg/kg wet)	Endosulfan Sulfate (µg/kg wet)	Endrin (µg/kg wet)	Endrin Aldehyde (µg/kg wet)
3	river	CompStation3	10/5/2004	0	0.36 *U*	0.22 *U*	0.35 *U*	1.4	0.55 *J*	0.11 *U*	0.56 *J*
6	river	CompStation6	10/1/2004	0	0.73 *U*	2.1 *U*	0.71 *U*	2.5	0.57 *U*	2.1 *U*	2.1 *U*
7R	river	CompStation7	10/6/2004	0	0.74 *U*	0.44 *U*	0.72 *U*	2.8 *J*	0.57 *U*	5.7 *U*	0.39 *U*
9	river	CompStation9	10/1/2004	0	0.74 *U*	0.45 *U*	0.72 *U*	0.24 *U*	0.57 *U*	0.21 *U*	0.36 *U*
10	river	CR0005	10/6/2004	0	0.72 *U*	0.44 *U*	0.70 *U*	1.7 *J*	0.56 *U*	2.1 *U*	0.58 *J*

Table C-19. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Endrin Ketone (µg/kg wet)	γ-Chlordane (µg/kg wet)	γ-Hexachloro-cyclohexane (µg/kg wet)	Heptachlor (µg/kg wet)	Heptachlor Epoxide (µg/kg wet)	Methoxychlor (µg/kg wet)	Toxaphene (µg/kg wet)
3	river	CompStation3	10/5/2004	0	3.6 *U*	4.7	0.29 *U*	0.47 *U*	1.9 *U*	0.28 *U*	19 *U*
6	river	CompStation6	10/1/2004	0	0.61 *U*	4.7 *U*	2.1 *U*	0.94 *U*	3.6	0.57 *U*	52 *U*
7R	river	CompStation7	10/6/2004	0	0.61 *U*	3.9 *U*	0.59 *U*	0.95 *U*	3.1 *J*	0.57 *U*	23 *U*
9	river	CompStation9	10/1/2004	0	0.61 *U*	2.1 *U*	0.59 *U*	0.95 *U*	0.32 *U*	0.57 *U*	58 *U*
10	river	CR0005	10/6/2004	0	3.3 *U*	3.9 *U*	0.58 *U*	0.93 *U*	1.6 *U*	0.56 *U*	69 *U*

Station	Zone	Sample Number	Date	Field Replicate	Aroclor® 1016 (µg/kg wet)	Aroclor® 1221 (µg/kg wet)	Aroclor® 1232 (µg/kg wet)	Aroclor® 1242 (µg/kg wet)	Aroclor® 1248 (µg/kg wet)	Aroclor® 1254 (µg/kg wet)	Aroclor® 1260 (µg/kg wet)	PCBs (µg/kg wet)
3	river	CompStation3	10/5/2004	0	2.1 *U*	3.2 *U*	2.1 *U*	3.6 *U*	0.78 *U*	67 *U*	65	65
6	river	CompStation6	10/1/2004	0	4.2 *U*	6.5 *U*	4.2 *U*	7.3 *U*	1.6 *U*	78 *U*	81	81
7R	river	CompStation7	10/6/2004	0	4.2 *U*	6.5 *U*	4.2 *U*	7.4 *U*	1.6 *U*	46 *U*	52	52
9	river	CompStation9	10/1/2004	0	4.2 *U*	6.6 *U*	4.2 *U*	7.4 *U*	1.6 *U*	27 *U*	26	26
10	river	CR0005	10/6/2004	0	4.2 *U*	6.4 *U*	4.2 *U*	7.2 *U*	1.6 *U*	54 *U*	58 *J*	58 *J*

Note: River crab samples were analyzed as whole body samples.

PCB - polychlorinated biphenyl
J - estimated
U - undetected at detection limit shown

Table C-20. Dioxin and furan results for river crabs

Station	Zone	Sample Number	Date	Field Replicate	2,3,7,8-Tetrachloro-dibenzo-*p*-dioxin (ng/kg wet)	1,2,3,7,8-Pentachloro-dibenzo-*p*-dioxin (ng/kg wet)	1,2,3,4,7,8-Hexachloro-dibenzo-*p*-dioxin (ng/kg wet)	1,2,3,6,7,8-Hexachloro-dibenzo-*p*-dioxin (ng/kg wet)	1,2,3,7,8,9-Hexachloro-dibenzo-*p*-dioxin (ng/kg wet)	1,2,3,4,6,7,8-Heptachloro-dibenzo-*p*-dioxin (ng/kg wet)	Octachloro-dibenzo-*p*-dioxin (ng/kg wet)
8	river	CompStation8	10/1/2004	0	0.50 *J*	0.16 *J*	0.042 *U*	0.16 *J*	0.042 *U*	1.4 *J*	28
9	river	CompStation9	10/1/2004	0	0.47 *J*	0.10 *J*	0.050 *J*	0.15 *J*	0.074 *U*	1.3 *J*	26
AQUAREF1	Rriver	CompAquaRef1	10/5/2004	0	0.32 *J*	0.061 *J*	0.017 *U*	0.096 *J*	0.049 *U*	1.2 *U*	28

Station	Zone	Sample Number	Date	Field Replicate	2,3,7,8-Tetrachloro-dibenzofuran (ng/kg wet)	1,2,3,7,8-Pentachloro-dibenzofuran (ng/kg wet)	2,3,4,7,8-Pentachloro-dibenzofuran (ng/kg wet)	1,2,3,4,7,8-Hexachloro-dibenzofuran (ng/kg wet)	1,2,3,6,7,8-Hexachloro-dibenzofuran (ng/kg wet)	2,3,4,6,7,8-Hexachloro-dibenzofuran (ng/kg wet)	1,2,3,7,8,9-Hexachloro-dibenzofuran (ng/kg wet)
8	river	CompStation8	10/1/2004	0	2.5	0.24 *J*	0.35 *J*	0.25 *U*	0.13 *U*	0.054 *U*	0.049 *U*
9	river	CompStation9	10/1/2004	0	1.6	0.18 *J*	0.18 *J*	0.21 *U*	0.069 *U*	0.045 *U*	0.034 *U*
AQUAREF1	Rriver	CompAquaRef1	10/5/2004	0	1.1	0.13 *J*	0.14 *J*	0.16 *U*	0.042 *U*	0.027 *U*	0.035 *U*

Table C-20. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	1,2,3,4,6,7,8-Heptachloro-dibenzofuran (ng/kg wet)	1,2,3,4,7,8,9-Heptachloro-dibenzofuran (ng/kg wet)	Octachloro-dibenzofuran (ng/kg wet)	Total Tetrachloro-dibenzo-*p*-dioxins (ng/kg wet)	Total Pentachloro-dibenzo-*p*-dioxins (ng/kg wet)	Total Hexachloro-dibenzo-*p*-dioxins (ng/kg wet)
8	river	CompStation8	10/1/2004	0	0.53 *U*	0.10 *U*	0.92 *U*	0.69	0.16	0.44
9	river	CompStation9	10/1/2004	0	0.45 *U*	0.024 *U*	1.0 *U*	0.79	0.27	0.48
AQUAREF1	Rriver	CompAquaRef1	10/5/2004	0	0.31 *U*	0.033 *U*	0.47 *U*	0.41	0.076	0.51

Station	Zone	Sample Number	Date	Field Replicate	Total Heptachloro-dibenzo-*p*-dioxins (ng/kg wet)	Total Tetrachloro-dibenzofurans (ng/kg wet)	Total Pentachloro-dibenzofurans (ng/kg wet)	Total Hexachloro-dibenzofurans (ng/kg wet)	Total Heptachloro-dibenzofurans (ng/kg wet)
8	river	CompStation8	10/1/2004	0	3.1	9.8	5.5	1.2	0.97
9	river	CompStation9	10/1/2004	0	2.9	7.5	3.5	0.67	0.89
AQUAREF1	Rriver	CompAquaRef1	10/5/2004	0	2.7	3.3	2.4	0.37	0.52

Note: River crab samples were analyzed as whole body samples.

Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table C-21. Inorganic chemical results for river crabs

Station	Zone	Sample Number	Date	Field Replicate	Aluminum (mg/kg wet)	Antimony (mg/kg wet)	Arsenic (mg/kg wet)	Barium (mg/kg wet)	Beryllium (mg/kg wet)	Cadmium (mg/kg wet)	Chromium (mg/kg wet)
3	river	CompStation3	10/5/2004	0	329	0.012	0.82 *J*	16.2	0.0033	0.021	0.86
5	river	CompStation5	10/1/2004	0	396	0.060	2.7 *J*	25.4	0.013	0.022	0.95
6	river	CompStation6	10/1/2004	0	40.8	0.0078	0.76 *J*	17.2	0.0022 *U*	0.031	0.47
7R	river	CompStation7	10/6/2004	0	49.4	0.0064	0.66 *J*	15.6	0.0020 *U*	0.022	0.17
8	river	CompStation8	10/1/2004	0	102	0.020	1.2 *J*	19.8	0.0058	0.034	0.18
9	river	CompStation9	10/1/2004	0	104	0.012	0.83 *J*	14.2	0.0037	0.032	0.27
10	river	CR0005	10/6/2004	0	79.7	0.0087	0.85 *J*	19.8	0.0039	0.018	0.19
AQUAREF1	Rriver	CompAquaRef1	10/5/2004	0	107	0.014	0.72 *J*	15.9	0.0037	0.024	0.21
AQUAREF4	Rriver	CompAquaRef4	10/6/2004	0	52.9	0.0091	0.71 *J*	22.2	0.0025 *U*	0.054	0.14

Station	Zone	Sample Number	Date	Field Replicate	Cobalt (mg/kg wet)	Copper (mg/kg wet)	Iron (mg/kg wet)	Lead (mg/kg wet)	Manganese (mg/kg wet)	Mercury (mg/kg wet)	Nickel (mg/kg wet)
3	river	CompStation3	10/5/2004	0	0.14	19.3	639	0.26	156	0.021	1.0
5	river	CompStation5	10/1/2004	0	0.61	22.7	768	1.6	188	0.024	1.7
6	river	CompStation6	10/1/2004	0	0.13	14.6	84.3	0.17	59.6	0.015	1.2
7R	river	CompStation7	10/6/2004	0	0.082	7.9	99.3	0.18	34.0	0.016	0.90
8	river	CompStation8	10/1/2004	0	0.34	11.6	239	0.33	93.0	0.021	1.2
9	river	CompStation9	10/1/2004	0	0.18	13.6	191	0.36	42.7	0.018	1.0
10	river	CR0005	10/6/2004	0	0.14	15.0	130	0.21	71.9	0.021	1.1
AQUAREF1	Rriver	CompAquaRef1	10/5/2004	0	0.11	11.1	212	0.30	54.5	0.032	0.87
AQUAREF4	Rriver	CompAquaRef4	10/6/2004	0	0.13	16.0	87.5	0.17	36.1	0.012	0.97

Table C-21. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Selenium (mg/kg wet)	Silver (mg/kg wet)	Thallium (mg/kg wet)	Vanadium (mg/kg wet)	Zinc (mg/kg wet)
3	river	CompStation3	10/5/2004	0	0.31	0.16	0.00099	0.46	14.7 *J*
5	river	CompStation5	10/1/2004	0	0.44	0.16	0.0028	1.6	17.9 *J*
6	river	CompStation6	10/1/2004	0	0.32	0.31	0.00063 *U*	0.36	14.6 *J*
7R	river	CompStation7	10/6/2004	0	0.24	0.15	0.00084	0.42	11.3 *J*
8	river	CompStation8	10/1/2004	0	0.23	0.18	0.0011	0.74	14.0 *J*
9	river	CompStation9	10/1/2004	0	0.31	0.25	0.00092	0.54	16.2 *J*
10	river	CR0005	10/6/2004	0	0.31	0.26	0.00097	0.43	14.3 *J*
AQUAREF1	Rriver	CompAquaRef1	10/5/2004	0	0.17	0.11	0.0013	0.48	10.1 *J*
AQUAREF4	Rriver	CompAquaRef4	10/6/2004	0	0.36	0.28	0.0011	0.35	16.4 *J*

Station	Zone	Sample Number	Date	Field Replicate	Calcium (mg/kg wet)	Magnesium (mg/kg wet)	Potassium (mg/kg wet)	Sodium (mg/kg wet)
3	river	CompStation3	10/5/2004	0	60,200	3,160	1,590	3,510
5	river	CompStation5	10/1/2004	0	73,300	3,780	1,900	4,200
6	river	CompStation6	10/1/2004	0	54,200	2,370	1,950	3,320
7R	river	CompStation7	10/6/2004	0	48,800	2,190	1,720	4,020
8	river	CompStation8	10/1/2004	0	69,100	3,090	1,980	3,910
9	river	CompStation9	10/1/2004	0	55,500	2,710	1,770	3,230
10	river	CR0005	10/6/2004	0	58,000	2,590	2,010	3,660
AQUAREF1	Rriver	CompAquaRef1	10/5/2004	0	47,200	2,420	1,640	3,890
AQUAREF4	Rriver	CompAquaRef4	10/6/2004	0	60,900	2,340	2,250	4,130

Note: Inorganic chemical results converted from dry-weight basis.
River crab samples were analyzed as whole body samples.

Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table C-22. Conventional parameter results for river crabs

Station	Zone	Sample Number	Date	Field Replicate	Lipid (% wet)	Total Solids (dry wt. as percent of wet wt. or volume) (% wet)
3	river	CompStation3	10/5/2004	0	1.3	33.1
5	river	CompStation5	10/1/2004	0		39.6
6	river	CompStation6	10/1/2004	0	1.3	31.4
7R	river	CompStation7	10/6/2004	0	0.61	27.9
8	river	CompStation8	10/1/2004	0		36.2
9	river	CompStation9	10/1/2004	0	0.73	30.5
10	river	CR0005	10/6/2004	0	0.58	32.4
AQUAREF1	Rriver	CompAquaRef1	10/5/2004	0		26.1
AQUAREF4	Rriver	CompAquaRef4	10/6/2004	0		35.0

Note: River crab samples were analyzed as whole body samples.

Rriver - river reference zone

Table C-23. Semivolatile organic compound results for estuarine fishes

Station	Zone	Sample Number	Date	Field Replicate	2,4,5-Trichlorophenol (µg/kg wet)	2,4,6-Trichlorophenol (µg/kg wet)	2,4-Dichlorophenol (µg/kg wet)	2,4-Dimethylphenol (µg/kg wet)	2,4-Dinitrophenol (µg/kg wet)	2,4-Dinitrotoluene (µg/kg wet)	2,6-Dinitrotoluene (µg/kg wet)
1	river	FI0079	10/7/2004	1	15 *J*	9.6 *U*	14 *U*	15 *U*	25 *U*	9.3 *U*	7.6 *U*
1	river	FI0080	10/7/2004	2	13 *U*	9.7 *U*	14 *U*	15 *U*	26 *U*	9.4 *U*	7.7 *U*
1	river	FI0081	10/7/2004	3	13 *U*	9.7 *U*	14 *U*	15 *U*	26 *U*	9.3 *U*	7.7 *U*
2	river	FI0082	10/7/2004	1	12 *U*	9.6 *U*	14 *U*	15 *U*	26 *U*	9.3 *U*	7.7 *U*
2	river	FI0083	10/7/2004	2	12 *U*	9.2 *U*	13 *U*	14 *U*	24 *U*	8.9 *U*	7.3 *U*
2	river	FI0084	10/7/2004	3	13 *U*	9.7 *U*	14 *U*	15 *U*	26 *U*	9.3 *U*	7.7 *U*
3	river	FI0085	10/7/2004	1	280 *U*	220 *U*	300 *U*	330 *U*	570 *U*	210 *U*	180 *U*
3	river	FI0086	10/7/2004	2	190 *U*	150 *U*	210 *U*	220 *U*	390 *U*	150 *U*	120 *U*
3	river	FI0087	10/7/2004	3	12 *U*	9.3 *U*	13 *U*	14 *U*	25 *U*	9.0 *U*	7.4 *U*
4	river	FI0088	10/7/2004	1	12 *U*	9.1 *U*	13 *U*	14 *U*	24 *U*	8.8 *U*	7.2 *U*
4	river	FI0089	10/7/2004	2	13 *U*	9.7 *U*	14 *U*	15 *U*	26 *U*	9.3 *U*	7.7 *U*
4	river	FI0090	10/7/2004	3	13 *U*	9.8 *U*	14 *U*	15 *U*	26 *U*	9.5 *U*	7.8 *U*
5	river	FI0091	10/7/2004	1	12 *U*	9.5 *U*	13 *U*	15 *U*	25 *U*	9.2 *U*	7.6 *U*
5	river	FI0092	10/7/2004	2	13 *U*	9.7 *U*	14 *U*	15 *U*	26 *U*	9.4 *U*	7.8 *U*
5	river	FI0093	10/7/2004	3	12 *U*	9.5 *U*	13 *U*	14 *U*	25 *U*	9.2 *U*	7.6 *U*
6	river	FI0094	10/7/2004	1	12 *U*	9.6 *U*	14 *U*	15 *U*	26 *U*	9.3 *U*	7.7 *U*
6	river	FI0095	10/7/2004	2	13 *U*	9.8 *U*	14 *U*	15 *U*	26 *U*	9.5 *U*	7.8 *U*
6	river	FI0096	10/7/2004	3	13 *U*	9.7 *U*	14 *U*	15 *U*	26 *U*	9.4 *U*	7.8 *U*
7R	river	FI0097	10/7/2004	1	12 *U*	9.4 *U*	13 *U*	14 *U*	25 *U*	9.0 *U*	7.4 *U*
7R	river	FI0098	10/7/2004	2	13 *U*	9.8 *U*	14 *U*	15 *U*	26 *U*	9.5 *U*	7.8 *U*
7R	river	FI0099	10/7/2004	3	130 *U*	97 *U*	140 *U*	150 *U*	260 *U*	93 *U*	77 *U*
8	river	FI0100	10/7/2004	1	120 *U*	95 *U*	130 *U*	140 *U*	250 *U*	92 *U*	76 *U*
8	river	FI0101	10/7/2004	2	120 *U*	93 *U*	130 *U*	140 *U*	250 *U*	90 *U*	77 *J*
8	river	FI0102	10/7/2004	3	120 *U*	93 *U*	130 *U*	140 *U*	250 *U*	90 *U*	74 *U*
9	river	FI0103	10/7/2004	1	120 *U*	94 *U*	130 *U*	140 *U*	250 *U*	91 *U*	75 *U*
9	river	FI0104	10/7/2004	2	120 *U*	93 *U*	130 *U*	140 *U*	250 *U*	89 *U*	74 *U*
9	river	FI0105	10/7/2004	3	120 *U*	96 *U*	140 *U*	150 *U*	250 *U*	130 *J*	76 *U*
10	river	FI0106	10/7/2004	1	120 *U*	94 *U*	130 *U*	140 *U*	250 *U*	91 *U*	75 *U*
10	river	FI0107	10/7/2004	2	120 *U*	95 *U*	130 *U*	140 *U*	250 *U*	92 *U*	76 *U*
10	river	FI0108	10/7/2004	3	120 *U*	96 *U*	130 *U*	150 *U*	250 *U*	92 *U*	76 *U*
AQUAREF1	Rriver	FI0109	10/7/2004	1	120 *U*	94 *U*	130 *U*	140 *U*	250 *U*	91 *U*	75 *U*
AQUAREF1	Rriver	FI0110	10/7/2004	2	130 *U*	97 *U*	140 *U*	150 *U*	260 *U*	94 *U*	77 *U*
AQUAREF1	Rriver	FI0111	10/7/2004	3	120 *U*	94 *U*	130 *U*	140 *U*	250 *U*	91 *U*	75 *U*
AQUAREF4	Rriver	FI0112	10/7/2004	1	120 *U*	95 *U*	130 *U*	140 *U*	250 *U*	92 *U*	76 *U*
AQUAREF4	Rriver	FI0113	10/7/2004	2	120 *U*	94 *U*	130 *U*	140 *U*	250 *U*	91 *U*	75 *U*

Table C-23. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	2-Chloro-naphthalene (µg/kg wet)	2-Chlorophenol (µg/kg wet)	2-Methyl-4,6-dinitrophenol (µg/kg wet)	2-Methyl-naphthalene (µg/kg wet)	2-Methylphenol (µg/kg wet)	2-Nitroaniline (µg/kg wet)	2-Nitrophenol (µg/kg wet)
1	river	FI0079	10/7/2004	1	6.4 *U*	12 *U*	17 *U*	1.6 *J*	58 *U*	29 *U*	17 *U*
1	river	FI0080	10/7/2004	2	6.5 *U*	13 *U*	17 *U*	1.8 *J*	59 *U*	29 *U*	17 *U*
1	river	FI0081	10/7/2004	3	6.5 *U*	13 *U*	17 *U*	2.0 *J*	58 *U*	29 *U*	17 *U*
2	river	FI0082	10/7/2004	1	6.5 *U*	12 *U*	17 *U*	1.9 *J*	58 *U*	29 *U*	17 *U*
2	river	FI0083	10/7/2004	2	6.2 *U*	12 *U*	16 *U*	3.1 *J*	55 *U*	27 *U*	16 *U*
2	river	FI0084	10/7/2004	3	6.5 *U*	13 *U*	17 *U*	1.9 *J*	58 *U*	29 *U*	17 *U*
3	river	FI0085	10/7/2004	1	150 *U*	280 *U*	370 *U*	1.7 *J*	1,400 *U*	650 *U*	370 *U*
3	river	FI0086	10/7/2004	2	99 *U*	190 *U*	260 *U*	2.7 *J*	890 *U*	440 *U*	260 *U*
3	river	FI0087	10/7/2004	3	6.3 *U*	12 *U*	16 *U*	2.0 *J*	56 *U*	28 *U*	16 *U*
4	river	FI0088	10/7/2004	1	6.1 *U*	12 *U*	16 *U*	2.3 *J*	55 *U*	27 *U*	16 *U*
4	river	FI0089	10/7/2004	2	6.5 *U*	13 *U*	17 *U*	2.2 *J*	58 *U*	29 *U*	17 *U*
4	river	FI0090	10/7/2004	3	6.6 *U*	13 *U*	17 *U*	1.8 *J*	59 *U*	29 *U*	17 *U*
5	river	FI0091	10/7/2004	1	6.4 *U*	12 *U*	17 *U*	2.1 *J*	58 *U*	29 *U*	17 *U*
5	river	FI0092	10/7/2004	2	6.5 *U*	13 *U*	17 *U*	3.1 *J*	59 *U*	29 *U*	17 *U*
5	river	FI0093	10/7/2004	3	6.4 *U*	12 *U*	17 *U*	2.0 *J*	58 *U*	28 *U*	17 *U*
6	river	FI0094	10/7/2004	1	6.5 *U*	12 *U*	17 *U*	2.9 *J*	58 *U*	29 *U*	17 *U*
6	river	FI0095	10/7/2004	2	6.6 *U*	13 *U*	17 *U*	2.9 *J*	60 *U*	29 *U*	17 *U*
6	river	FI0096	10/7/2004	3	6.5 *U*	13 *U*	17 *U*	1.7 *J*	59 *U*	29 *U*	17 *U*
7R	river	FI0097	10/7/2004	1	6.3 *U*	12 *U*	16 *U*	2.8 *J*	57 *U*	28 *U*	16 *U*
7R	river	FI0098	10/7/2004	2	6.6 *U*	13 *U*	17 *U*	2.6 *J*	59 *U*	29 *U*	17 *U*
7R	river	FI0099	10/7/2004	3	65 *U*	130 *U*	170 *U*	1.2 *J*	580 *U*	290 *U*	170 *U*
8	river	FI0100	10/7/2004	1	64 *U*	120 *U*	170 *U*	1.3 *J*	570 *U*	280 *U*	170 *U*
8	river	FI0101	10/7/2004	2	63 *U*	120 *U*	160 *U*	2.7 *J*	560 *U*	280 *U*	160 *U*
8	river	FI0102	10/7/2004	3	63 *U*	120 *U*	160 *U*	2.2 *J*	560 *U*	280 *U*	160 *U*
9	river	FI0103	10/7/2004	1	63 *U*	120 *U*	160 *U*	2.2 *J*	570 *U*	280 *U*	160 *U*
9	river	FI0104	10/7/2004	2	62 *U*	120 *U*	160 *U*	0.47 *J*	560 *U*	280 *U*	160 *U*
9	river	FI0105	10/7/2004	3	64 *U*	120 *U*	170 *U*	2.1 *J*	580 *U*	290 *U*	170 *U*
10	river	FI0106	10/7/2004	1	63 *U*	120 *U*	160 *U*	1.8 *J*	570 *U*	280 *U*	160 *U*
10	river	FI0107	10/7/2004	2	64 *U*	120 *U*	170 *U*	1.9 *J*	580 *U*	280 *U*	170 *U*
10	river	FI0108	10/7/2004	3	64 *U*	120 *U*	170 *U*	1.5 *J*	580 *U*	290 *U*	170 *U*
AQUAREF1	Rriver	FI0109	10/7/2004	1	63 *U*	120 *U*	160 *U*	3.3 *J*	570 *U*	280 *U*	160 *U*
AQUAREF1	Rriver	FI0110	10/7/2004	2	65 *U*	130 *U*	170 *U*	1.8 *J*	590 *U*	290 *U*	170 *U*
AQUAREF1	Rriver	FI0111	10/7/2004	3	63 *U*	120 *U*	160 *U*	1.9 *J*	570 *U*	280 *U*	160 *U*
AQUAREF4	Rriver	FI0112	10/7/2004	1	64 *U*	120 *U*	170 *U*	1.6 *J*	570 *U*	280 *U*	170 *U*
AQUAREF4	Rriver	FI0113	10/7/2004	2	63 *U*	120 *U*	160 *U*	2.5 *J*	570 *U*	280 *U*	160 *U*

Table C-23. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	3,3'-Dichloro-benzidine (µg/kg wet)	3-Nitroaniline (µg/kg wet)	4-Bromophenyl ether (µg/kg wet)	4-Chloro-3-methylphenol (µg/kg wet)	4-Chloroaniline (µg/kg wet)	4-Chlorophenyl-phenyl ether (µg/kg wet)	4-Methylphenol (µg/kg wet)
1	river	FI0079	10/7/2004	1	850 *U*	9.7 *U*	6.0 *U*	140 *U*	6.4 *U*	4.9 *U*	31 *J*
1	river	FI0080	10/7/2004	2	860 *U*	9.8 *U*	6.1 *U*	79 *U*	6.5 *U*	5.0 *U*	17 *U*
1	river	FI0081	10/7/2004	3	860 *U*	9.8 *U*	6.1 *U*	79 *U*	6.5 *U*	5.0 *U*	17 *U*
2	river	FI0082	10/7/2004	1	850 *U*	9.7 *U*	6.0 *U*	79 *U*	6.5 *U*	4.9 *U*	17 *U*
2	river	FI0083	10/7/2004	2	810 *U*	9.3 *U*	5.7 *U*	75 *U*	6.2 *U*	4.7 *U*	16 *U*
2	river	FI0084	10/7/2004	3	860 *U*	9.8 *U*	6.1 *U*	79 *U*	6.5 *U*	5.0 *U*	17 *U*
3	river	FI0085	10/7/2004	1	20,000 *U*	220 *U*	140 *U*	1,800 *U*	150 *U*	120 *U*	370 *U*
3	river	FI0086	10/7/2004	2	14,000 *U*	150 *U*	93 *U*	1,300 *U*	99 *U*	76 *U*	260 *U*
3	river	FI0087	10/7/2004	3	830 *U*	9.4 *U*	5.8 *U*	76 *U*	6.3 *U*	4.8 *U*	16 *U*
4	river	FI0088	10/7/2004	1	810 *U*	9.2 *U*	5.7 *U*	74 *U*	6.1 *U*	4.7 *U*	16 *U*
4	river	FI0089	10/7/2004	2	860 *U*	9.8 *U*	6.1 *U*	79 *U*	6.5 *U*	5.0 *U*	17 *U*
4	river	FI0090	10/7/2004	3	870 *U*	9.9 *U*	6.2 *U*	80 *U*	6.6 *U*	5.0 *U*	17 *U*
5	river	FI0091	10/7/2004	1	850 *U*	9.6 *U*	6.0 *U*	78 *U*	6.4 *U*	4.9 *U*	24 *J*
5	river	FI0092	10/7/2004	2	860 *U*	9.9 *U*	6.1 *U*	80 *U*	6.5 *U*	5.0 *U*	17 *U*
5	river	FI0093	10/7/2004	3	840 *U*	9.6 *U*	6.0 *U*	78 *U*	6.4 *U*	4.9 *U*	100
6	river	FI0094	10/7/2004	1	850 *U*	9.7 *U*	6.0 *U*	79 *U*	6.5 *U*	4.9 *U*	38 *J*
6	river	FI0095	10/7/2004	2	870 *U*	10 *U*	6.2 *U*	81 *U*	6.6 *U*	5.1 *U*	17 *U*
6	river	FI0096	10/7/2004	3	860 *U*	9.9 *U*	6.1 *U*	80 *U*	6.5 *U*	5.0 *U*	17 *U*
7R	river	FI0097	10/7/2004	1	830 *U*	9.5 *U*	5.9 *U*	77 *U*	6.3 *U*	4.8 *U*	16 *U*
7R	river	FI0098	10/7/2004	2	870 *U*	9.9 *U*	6.1 *U*	80 *U*	6.6 *U*	5.0 *U*	17 *U*
7R	river	FI0099	10/7/2004	3	8,600 *U*	98 *U*	61 *U*	790 *U*	65 *U*	50 *U*	170 *U*
8	river	FI0100	10/7/2004	1	8,400 *U*	96 *U*	60 *U*	780 *U*	64 *U*	49 *U*	170 *U*
8	river	FI0101	10/7/2004	2	8,300 *U*	94 *U*	59 *U*	760 *U*	63 *U*	48 *U*	160 *U*
8	river	FI0102	10/7/2004	3	8,300 *U*	94 *U*	59 *U*	770 *U*	63 *U*	48 *U*	160 *U*
9	river	FI0103	10/7/2004	1	8,300 *U*	95 *U*	59 *U*	770 *U*	63 *U*	48 *U*	160 *U*
9	river	FI0104	10/7/2004	2	8,200 *U*	94 *U*	58 *U*	760 *U*	62 *U*	48 *U*	160 *U*
9	river	FI0105	10/7/2004	3	8,500 *U*	97 *U*	60 *U*	790 *U*	64 *U*	49 *U*	170 *U*
10	river	FI0106	10/7/2004	1	8,300 *U*	95 *U*	59 *U*	770 *U*	63 *U*	48 *U*	160 *U*
10	river	FI0107	10/7/2004	2	8,400 *U*	96 *U*	60 *U*	780 *U*	64 *U*	49 *U*	170 *U*
10	river	FI0108	10/7/2004	3	8,500 *U*	97 *U*	60 *U*	780 *U*	64 *U*	49 *U*	170 *U*
AQUAREF1	Rriver	FI0109	10/7/2004	1	8,300 *U*	95 *U*	59 *U*	770 *U*	63 *U*	48 *U*	160 *U*
AQUAREF1	Rriver	FI0110	10/7/2004	2	8,600 *U*	98 *U*	61 *U*	790 *U*	65 *U*	50 *U*	170 *U*
AQUAREF1	Rriver	FI0111	10/7/2004	3	8,400 *U*	95 *U*	59 *U*	770 *U*	63 *U*	48 *U*	160 *U*
AQUAREF4	Rriver	FI0112	10/7/2004	1	8,400 *U*	96 *U*	60 *U*	780 *U*	64 *U*	49 *U*	170 *U*
AQUAREF4	Rriver	FI0113	10/7/2004	2	8,400 *U*	95 *U*	59 *U*	770 *U*	63 *U*	48 *U*	160 *U*

Table C-23. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	4-Nitroaniline (µg/kg wet)	4-Nitrophenol (µg/kg wet)	Acenaphthene (µg/kg wet)	Acenaph-thylene (µg/kg wet)	Acetophenone (µg/kg wet)	Anthracene (µg/kg wet)	Atrazine (µg/kg wet)
1	river	FI0079	10/7/2004	1	29 *U*	8.2 *U*	1.5 *J*	0.46 *J*	25 *J*	0.80 *J*	6.0 *U*
1	river	FI0080	10/7/2004	2	29 *U*	8.3 *U*	1.4 *J*	0.053 *U*	22 *U*	0.82 *J*	840 *U*
1	river	FI0081	10/7/2004	3	29 *U*	8.2 *U*	1.5 *J*	0.48 *J*	22 *U*	1.2 *J*	730 *U*
2	river	FI0082	10/7/2004	1	29 *U*	8.2 *U*	1.1 *J*	0.34 *J*	22 *U*	0.62 *J*	420 *U*
2	river	FI0083	10/7/2004	2	27 *U*	7.8 *U*	1.6 *J*	0.57 *J*	21 *U*	0.75 *J*	430 *U*
2	river	FI0084	10/7/2004	3	29 *U*	8.2 *U*	1.2 *J*	0.40 *J*	22 *U*	0.76 *J*	360 *U*
3	river	FI0085	10/7/2004	1	650 *U*	190 *U*	2.3 *J*	0.053 *U*	500 *U*	0.76 *J*	140 *U*
3	river	FI0086	10/7/2004	2	440 *U*	130 *U*	2.1 *J*	0.50 *J*	340 *U*	0.71 *J*	93 *U*
3	river	FI0087	10/7/2004	3	28 *U*	7.9 *U*	1.8 *J*	0.053 *U*	22 *U*	0.97 *J*	140 *U*
4	river	FI0088	10/7/2004	1	27 *U*	7.7 *U*	1.6 *J*	0.38 *J*	21 *U*	0.61 *J*	91 *U*
4	river	FI0089	10/7/2004	2	29 *U*	8.2 *U*	2.3 *J*	0.48 *J*	22 *U*	1.2 *J*	6.1 *U*
4	river	FI0090	10/7/2004	3	29 *U*	8.4 *U*	1.3 *J*	0.46 *J*	23 *U*	0.78 *J*	40 *U*
5	river	FI0091	10/7/2004	1	29 *U*	8.1 *U*	0.91 *J*	0.37 *J*	22 *U*	0.63 *J*	6.0 *U*
5	river	FI0092	10/7/2004	2	29 *U*	8.3 *U*	1.3 *J*	1.1 *J*	23 *U*	3.1 *J*	6.1 *U*
5	river	FI0093	10/7/2004	3	28 *U*	8.1 *U*	1.3 *J*	0.47 *J*	22 *U*	0.79 *J*	6.0 *U*
6	river	FI0094	10/7/2004	1	29 *U*	8.2 *U*	1.2 *J*	0.40 *J*	22 *U*	0.62 *J*	6.0 *U*
6	river	FI0095	10/7/2004	2	29 *U*	8.4 *U*	1.8 *J*	0.50 *J*	23 *U*	0.68 *J*	6.2 *U*
6	river	FI0096	10/7/2004	3	29 *U*	8.3 *U*	1.6 *J*	0.48 *J*	23 *U*	0.64 *J*	6.1 *U*
7R	river	FI0097	10/7/2004	1	28 *U*	8.0 *U*	1.9 *J*	0.47 *J*	22 *U*	0.87 *J*	5.9 *U*
7R	river	FI0098	10/7/2004	2	29 *U*	8.4 *U*	2.1 *J*	0.053 *U*	23 *U*	0.81 *J*	6.1 *U*
7R	river	FI0099	10/7/2004	3	290 *U*	82 *U*	1.5 *J*	1.0 *J*	220 *U*	5.4	61 *U*
8	river	FI0100	10/7/2004	1	280 *U*	81 *U*	0.78 *J*	0.35 *J*	220 *U*	0.56 *J*	60 *U*
8	river	FI0101	10/7/2004	2	280 *U*	80 *U*	1.1 *J*	0.57 *J*	220 *U*	0.79 *J*	59 *U*
8	river	FI0102	10/7/2004	3	280 *U*	80 *U*	1.7 *J*	0.52 *J*	220 *U*	0.81 *J*	59 *U*
9	river	FI0103	10/7/2004	1	280 *U*	80 *U*	1.1 *J*	0.32 *J*	220 *U*	0.51 *J*	59 *U*
9	river	FI0104	10/7/2004	2	280 *U*	79 *U*	0.33 *J*	0.33 *J*	210 *U*	0.49 *J*	58 *U*
9	river	FI0105	10/7/2004	3	290 *U*	82 *U*	1.1 *J*	0.35 *J*	220 *U*	0.65 *J*	60 *U*
10	river	FI0106	10/7/2004	1	280 *U*	80 *U*	0.81 *J*	0.38 *J*	220 *U*	0.50 *J*	59 *U*
10	river	FI0107	10/7/2004	2	280 *U*	81 *U*	1.1 *J*	0.34 *J*	220 *U*	0.53 *J*	60 *U*
10	river	FI0108	10/7/2004	3	290 *U*	81 *U*	0.94 *J*	0.36 *J*	220 *U*	0.60 *J*	60 *U*
AQUAREF1	Rriver	FI0109	10/7/2004	1	280 *U*	80 *U*	1.7 *J*	0.48 *J*	220 *U*	0.81 *J*	59 *U*
AQUAREF1	Rriver	FI0110	10/7/2004	2	290 *U*	83 *U*	1.3 *J*	0.54 *J*	220 *U*	0.74 *J*	61 *U*
AQUAREF1	Rriver	FI0111	10/7/2004	3	280 *U*	80 *U*	1.0 *J*	0.60 *J*	220 *U*	0.73 *J*	59 *U*
AQUAREF4	Rriver	FI0112	10/7/2004	1	280 *U*	81 *U*	0.94 *J*	0.35 *J*	220 *U*	0.60 *J*	60 *U*
AQUAREF4	Rriver	FI0113	10/7/2004	2	280 *U*	80 *U*	1.1 *J*	0.50 *J*	220 *U*	0.74 *J*	59 *U*

Table C-23. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Benz[a]-anthracene (µg/kg wet)	Benzaldehyde (µg/kg wet)	Benzo[a]pyrene (µg/kg wet)	Benzo[b]-fluoranthene (µg/kg wet)	Benzo[ghi]-perylene (µg/kg wet)	Benzo[k]-fluoranthene (µg/kg wet)	Biphenyl (µg/kg wet)
1	river	FI0079	10/7/2004	1	0.49 *J*	800 *UJ*	0.080 *U*	0.42 *J*	0.33 *J*	0.38 *J*	5.1 *U*
1	river	FI0080	10/7/2004	2	0.17 *J*	800 *UJ*	0.080 *U*	0.047 *U*	0.11 *U*	0.085 *U*	5.2 *U*
1	river	FI0081	10/7/2004	3	0.41 *J*	800 *UJ*	0.080 *U*	0.048 *U*	0.25 *J*	0.085 *U*	5.2 *U*
2	river	FI0082	10/7/2004	1	0.38 *J*	800 *UJ*	0.35 *J*	0.46 *J*	0.61 *J*	0.42 *J*	5.2 *U*
2	river	FI0083	10/7/2004	2	0.057 *U*	760 *UJ*	0.080 *U*	0.047 *U*	0.11 *U*	0.085 *U*	4.9 *U*
2	river	FI0084	10/7/2004	3	0.55 *J*	800 *UJ*	0.080 *U*	0.047 *U*	0.36 *J*	0.085 *U*	5.2 *U*
3	river	FI0085	10/7/2004	1	0.057 *U*	18,000 *UJ*	0.080 *U*	0.048 *U*	0.11 *U*	0.085 *U*	120 *U*
3	river	FI0086	10/7/2004	2	0.38 *J*	13,000 *UJ*	0.080 *U*	0.048 *U*	0.35 *J*	0.086 *U*	79 *U*
3	river	FI0087	10/7/2004	3	0.057 *U*	770 *UJ*	0.080 *U*	0.048 *U*	0.26 *J*	0.085 *U*	5.0 *U*
4	river	FI0088	10/7/2004	1	0.057 *U*	750 *UJ*	0.080 *U*	0.048 *U*	0.11 *U*	0.085 *U*	4.9 *U*
4	river	FI0089	10/7/2004	2	0.70 *J*	800 *UJ*	0.080 *U*	0.55 *J*	0.69 *J*	0.64 *J*	5.2 *U*
4	river	FI0090	10/7/2004	3	0.056 *U*	820 *UJ*	0.079 *U*	0.047 *U*	0.19 *J*	0.084 *U*	5.3 *U*
5	river	FI0091	10/7/2004	1	0.44 *J*	790 *UJ*	0.079 *U*	0.33 *J*	0.29 *J*	0.28 *J*	5.1 *U*
5	river	FI0092	10/7/2004	2	4.8 *J*	810 *UJ*	3.9 *J*	6.2	3.3 *J*	5.9	5.2 *U*
5	river	FI0093	10/7/2004	3	0.72 *J*	790 *UJ*	0.080 *U*	0.60 *J*	0.40 *J*	0.70 *J*	5.1 *U*
6	river	FI0094	10/7/2004	1	0.52 *J*	800 *UJ*	0.080 *U*	0.048 *U*	0.39 *J*	0.085 *U*	5.2 *U*
6	river	FI0095	10/7/2004	2	0.61 *J*	820 *UJ*	0.080 *U*	0.047 *U*	0.39 *J*	0.085 *U*	5.3 *U*
6	river	FI0096	10/7/2004	3	0.056 *U*	810 *UJ*	0.078 *U*	0.047 *U*	0.26 *J*	0.084 *U*	5.2 *U*
7R	river	FI0097	10/7/2004	1	0.81 *J*	780 *UJ*	0.080 *U*	0.047 *U*	0.65 *J*	0.085 *U*	5.0 *U*
7R	river	FI0098	10/7/2004	2	0.80 *J*	810 *UJ*	0.080 *U*	0.047 *U*	0.51 *J*	0.085 *U*	5.3 *U*
7R	river	FI0099	10/7/2004	3	17	8,000 *UJ*	4.7 *J*	7.5	2.5 *J*	6.7	52 *U*
8	river	FI0100	10/7/2004	1	0.81 *J*	7,900 *UJ*	0.80 *J*	0.77 *J*	0.83 *J*	0.71 *J*	51 *U*
8	river	FI0101	10/7/2004	2	1.5 *J*	7,800 *UJ*	1.5 *J*	1.8 *J*	1.6 *J*	1.5 *J*	50 *U*
8	river	FI0102	10/7/2004	3	1.3 *J*	7,800 *UJ*	1.4 *J*	1.5 *J*	1.5 *J*	1.6 *J*	50 *U*
9	river	FI0103	10/7/2004	1	0.18 *J*	7,800 *UJ*	0.077 *U*	0.046 *U*	0.31 *J*	0.082 *U*	50 *U*
9	river	FI0104	10/7/2004	2	0.83 *J*	7,700 *UJ*	0.73 *J*	1.0 *J*	0.89 *J*	0.77 *J*	50 *U*
9	river	FI0105	10/7/2004	3	0.70 *J*	8,000 *UJ*	0.65 *J*	0.77 *J*	0.77 *J*	0.67 *J*	51 *U*
10	river	FI0106	10/7/2004	1	0.30 *J*	7,800 *UJ*	0.081 *U*	0.048 *U*	0.22 *J*	0.086 *U*	50 *U*
10	river	FI0107	10/7/2004	2	0.32 *J*	7,900 *UJ*	0.080 *U*	0.30 *J*	0.30 *J*	0.085 *U*	51 *U*
10	river	FI0108	10/7/2004	3	0.060 *U*	7,900 *UJ*	0.084 *U*	0.050 *U*	0.58 *J*	0.089 *U*	51 *U*
AQUAREF1	Rriver	FI0109	10/7/2004	1	0.060 *U*	7,800 *UJ*	0.084 *U*	0.050 *U*	0.11 *U*	0.089 *U*	51 *U*
AQUAREF1	Rriver	FI0110	10/7/2004	2	0.62 *J*	8,000 *UJ*	0.082 *U*	0.53 *J*	0.45 *J*	0.65 *J*	52 *U*
AQUAREF1	Rriver	FI0111	10/7/2004	3	1.1 *J*	7,800 *UJ*	0.083 *U*	0.77 *J*	0.65 *J*	0.84 *J*	51 *U*
AQUAREF4	Rriver	FI0112	10/7/2004	1	0.51 *J*	7,900 *UJ*	0.081 *U*	0.048 *U*	0.41 *J*	0.086 *U*	51 *U*
AQUAREF4	Rriver	FI0113	10/7/2004	2	1.2 *J*	7,800 *UJ*	0.083 *U*	1.4 *J*	0.90 *J*	1.3 *J*	51 *U*

Table C-23. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Bis[2-chloroethoxy]-methane (µg/kg wet)	Bis[2-chloroethyl]-ether (µg/kg wet)	Bis[2-chloroisopropyl] ether (µg/kg wet)	Bis[2-Ethylhexyl]-phthalate (µg/kg wet)	Butylbenzyl phthalate (µg/kg wet)	Caprolactam (µg/kg wet)	Carbazole (µg/kg wet)
1	river	FI0079	10/7/2004	1	5.5 *U*	9.5 *U*	12 *U*	58 *U*	16 *U*	15 *U*	36 *U*
1	river	FI0080	10/7/2004	2	5.5 *U*	9.6 *U*	13 *U*	59 *U*	16 *U*	15 *U*	37 *U*
1	river	FI0081	10/7/2004	3	5.5 *U*	9.5 *U*	13 *U*	58 *U*	16 *U*	15 *U*	37 *U*
2	river	FI0082	10/7/2004	1	5.5 *U*	9.5 *U*	12 *U*	58 *U*	16 *U*	15 *U*	36 *U*
2	river	FI0083	10/7/2004	2	5.2 *U*	9.1 *U*	12 *U*	55 *U*	15 *U*	14 *U*	35 *U*
2	river	FI0084	10/7/2004	3	5.5 *U*	9.6 *U*	13 *U*	58 *U*	16 *U*	15 *U*	37 *U*
3	river	FI0085	10/7/2004	1	130 *U*	220 *U*	280 *U*	1,400 *U*	350 *U*	330 *U*	820 *U*
3	river	FI0086	10/7/2004	2	84 *U*	150 *U*	190 *U*	890 *U*	240 *U*	220 *U*	560 *U*
3	river	FI0087	10/7/2004	3	5.3 *U*	9.2 *U*	12 *U*	56 *U*	15 *U*	14 *U*	35 *U*
4	river	FI0088	10/7/2004	1	5.2 *U*	9.0 *U*	12 *U*	55 *U*	15 *U*	14 *U*	34 *U*
4	river	FI0089	10/7/2004	2	5.5 *U*	9.5 *U*	13 *U*	58 *U*	16 *U*	15 *U*	37 *U*
4	river	FI0090	10/7/2004	3	5.6 *U*	9.7 *U*	13 *U*	59 *U*	16 *U*	15 *U*	37 *U*
5	river	FI0091	10/7/2004	1	5.4 *U*	9.4 *U*	12 *U*	58 *U*	16 *U*	15 *U*	36 *U*
5	river	FI0092	10/7/2004	2	5.6 *U*	9.6 *U*	13 *U*	59 *U*	16 *U*	15 *U*	37 *U*
5	river	FI0093	10/7/2004	3	5.4 *U*	9.4 *U*	12 *U*	58 *U*	16 *U*	14 *U*	36 *U*
6	river	FI0094	10/7/2004	1	5.5 *U*	9.5 *U*	12 *U*	58 *U*	16 *U*	15 *U*	36 *U*
6	river	FI0095	10/7/2004	2	5.6 *U*	9.7 *U*	13 *U*	250 *J*	16 *U*	15 *U*	37 *U*
6	river	FI0096	10/7/2004	3	5.6 *U*	9.6 *U*	13 *U*	59 *U*	16 *U*	15 *U*	37 *U*
7R	river	FI0097	10/7/2004	1	5.3 *U*	9.2 *U*	12 *U*	57 *U*	15 *U*	14 *U*	35 *U*
7R	river	FI0098	10/7/2004	2	5.6 *U*	9.7 *U*	13 *U*	59 *U*	16 *U*	15 *U*	37 *U*
7R	river	FI0099	10/7/2004	3	55 *U*	96 *U*	130 *U*	580 *U*	160 *U*	150 *U*	370 *U*
8	river	FI0100	10/7/2004	1	54 *U*	94 *U*	120 *U*	570 *U*	340 *J*	140 *U*	360 *U*
8	river	FI0101	10/7/2004	2	53 *U*	92 *U*	120 *U*	560 *U*	380 *J*	140 *U*	350 *U*
8	river	FI0102	10/7/2004	3	53 *U*	92 *U*	120 *U*	560 *U*	480	140 *U*	350 *U*
9	river	FI0103	10/7/2004	1	54 *U*	93 *U*	120 *U*	570 *U*	400 *J*	140 *U*	360 *U*
9	river	FI0104	10/7/2004	2	53 *U*	92 *U*	120 *U*	560 *U*	420	140 *U*	350 *U*
9	river	FI0105	10/7/2004	3	55 *U*	95 *U*	120 *U*	580 *U*	280 *J*	150 *U*	360 *U*
10	river	FI0106	10/7/2004	1	54 *U*	93 *U*	120 *U*	570 *U*	450	140 *U*	350 *U*
10	river	FI0107	10/7/2004	2	54 *U*	94 *U*	120 *U*	580 *U*	430 *J*	140 *U*	360 *U*
10	river	FI0108	10/7/2004	3	54 *U*	94 *U*	120 *U*	580 *U*	390 *U*	150 *U*	360 *U*
AQUAREF1	Rriver	FI0109	10/7/2004	1	54 *U*	93 *U*	120 *U*	1,900 *J*	410 *J*	140 *U*	360 *U*
AQUAREF1	Rriver	FI0110	10/7/2004	2	55 *U*	96 *U*	130 *U*	590 *U*	330 *J*	150 *U*	370 *U*
AQUAREF1	Rriver	FI0111	10/7/2004	3	54 *U*	93 *U*	120 *U*	570 *U*	260 *J*	140 *U*	360 *U*
AQUAREF4	Rriver	FI0112	10/7/2004	1	54 *U*	94 *U*	120 *U*	570 *U*	260 *J*	140 *U*	360 *U*
AQUAREF4	Rriver	FI0113	10/7/2004	2	54 *U*	93 *U*	120 *U*	570 *U*	400 *J*	140 *U*	360 *U*

Table C-23. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Chrysene (µg/kg wet)	Dibenz[a,h]-anthracene (µg/kg wet)	Dibenzofuran (µg/kg wet)	Diethyl phthalate (µg/kg wet)	Dimethyl phthalate (µg/kg wet)	Di-*n*-butyl phthalate (µg/kg wet)	Di-*n*-octyl phthalate (µg/kg wet)
1	river	FI0079	10/7/2004	1	0.59 *J*	0.14 *J*	1.0 *J*	11 *U*	5.6 *U*	18 *U*	15 *U*
1	river	FI0080	10/7/2004	2	0.30 *J*	0.083 *U*	1.1 *J*	11 *U*	5.6 *U*	18 *U*	15 *U*
1	river	FI0081	10/7/2004	3	0.51 *J*	0.083 *U*	1.1 *J*	11 *U*	5.6 *U*	18 *U*	15 *U*
2	river	FI0082	10/7/2004	1	0.69 *J*	0.32 *J*	0.85 *J*	11 *U*	5.6 *U*	18 *U*	15 *U*
2	river	FI0083	10/7/2004	2	0.084 *U*	0.083 *U*	1.2 *J*	9.8 *U*	5.3 *U*	17 *U*	14 *U*
2	river	FI0084	10/7/2004	3	0.72 *J*	0.083 *U*	0.96 *J*	11 *U*	5.6 *U*	18 *U*	15 *U*
3	river	FI0085	10/7/2004	1	0.084 *U*	0.083 *U*	1.3 *J*	460 *J*	230 *J*	820 *J*	330 *U*
3	river	FI0086	10/7/2004	2	0.59 *J*	0.084 *U*	1.4 *J*	300 *J*	140 *J*	3,500 *J*	220 *U*
3	river	FI0087	10/7/2004	3	0.084 *U*	0.083 *U*	1.3 *J*	9.9 *U*	5.4 *U*	17 *U*	14 *U*
4	river	FI0088	10/7/2004	1	0.084 *U*	0.083 *U*	1.2 *J*	9.7 *U*	5.3 *U*	17 *U*	14 *U*
4	river	FI0089	10/7/2004	2	1.0 *J*	0.083 *U*	1.1 *J*	11 *U*	5.6 *U*	18 *U*	15 *U*
4	river	FI0090	10/7/2004	3	0.083 *U*	0.082 *U*	0.94 *J*	11 *U*	5.7 *U*	18 *U*	15 *U*
5	river	FI0091	10/7/2004	1	0.59 *J*	0.083 *U*	0.79 *J*	11 *U*	5.5 *U*	18 *U*	15 *U*
5	river	FI0092	10/7/2004	2	8.5	0.96 *J*	1.1 *J*	11 *U*	5.7 *U*	18 *U*	15 *U*
5	river	FI0093	10/7/2004	3	1.1 *J*	0.083 *U*	1.1 *J*	11 *U*	5.5 *U*	18 *U*	14 *U*
6	river	FI0094	10/7/2004	1	0.60 *J*	0.083 *U*	1.0 *J*	11 *U*	5.6 *U*	18 *U*	15 *U*
6	river	FI0095	10/7/2004	2	0.65 *J*	0.083 *U*	1.3 *J*	11 *U*	5.7 *U*	18 *U*	15 *U*
6	river	FI0096	10/7/2004	3	0.083 *U*	0.082 *U*	1.2 *J*	11 *U*	5.7 *U*	18 *U*	15 *U*
7R	river	FI0097	10/7/2004	1	0.91 *J*	0.083 *U*	1.0 *J*	10 *U*	5.4 *U*	17 *U*	14 *U*
7R	river	FI0098	10/7/2004	2	1.1 *J*	0.083 *U*	1.5 *J*	11 *U*	5.7 *U*	18 *U*	15 *U*
7R	river	FI0099	10/7/2004	3	14	0.96 *J*	1.2 *J*	180 *J*	98 *U*	360 *U*	150 *U*
8	river	FI0100	10/7/2004	1	1.1 *J*	0.26 *J*	0.75 *J*	180 *J*	130 *U*	320 *U*	140 *U*
8	river	FI0101	10/7/2004	2	2.0 *J*	0.36 *J*	1.1 *J*	170 *J*	110 *U*	330 *U*	140 *U*
8	river	FI0102	10/7/2004	3	1.9 *J*	0.31 *J*	1.4 *J*	100 *U*	94 *U*	170 *U*	140 *U*
9	river	FI0103	10/7/2004	1	0.35 *J*	0.080 *U*	0.87 *J*	160 *J*	94 *U*	330 *U*	140 *U*
9	river	FI0104	10/7/2004	2	0.97 *J*	0.23 *J*	0.47 *J*	130 *J*	94 *U*	300 *U*	140 *U*
9	river	FI0105	10/7/2004	3	1.1 *J*	0.16 *J*	1.1 *J*	110 *U*	94 *U*	290 *U*	150 *U*
10	river	FI0106	10/7/2004	1	0.37 *J*	0.084 *U*	0.71 *J*	190 *J*	94 *U*	350 *U*	140 *U*
10	river	FI0107	10/7/2004	2	0.47 *J*	0.083 *U*	0.90 *J*	110 *U*	94 *U*	210 *U*	140 *U*
10	river	FI0108	10/7/2004	3	0.57 *J*	0.30 *J*	0.79 *J*	110 *U*	98 *U*	180 *U*	150 *U*
AQUAREF1	Rriver	FI0109	10/7/2004	1	0.088 *U*	0.087 *U*	1.2 *J*	100 *U*	94 *U*	180 *U*	140 *U*
AQUAREF1	Rriver	FI0110	10/7/2004	2	0.83 *J*	0.085 *U*	1.3 *J*	110 *U*	94 *U*	3,500	150 *U*
AQUAREF1	Rriver	FI0111	10/7/2004	3	1.1 *J*	0.16 *J*	0.81 *J*	110 *U*	94 *U*	210 *U*	140 *U*
AQUAREF4	Rriver	FI0112	10/7/2004	1	0.64 *J*	0.084 *U*	0.81 *J*	110 *U*	94 *U*	180 *U*	140 *U*
AQUAREF4	Rriver	FI0113	10/7/2004	2	1.8 *J*	0.20 *J*	0.91 *J*	110 *U*	94 *U*	180 *U*	140 *U*

Table C-23. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Fluoranthene (µg/kg wet)	Fluorene (µg/kg wet)	Hexachloro-benzene (µg/kg wet)	Hexachloro-butadiene (µg/kg wet)	Hexachloro-cyclo-pentadiene (µg/kg wet)	Hexachloro-ethane (µg/kg wet)	Indeno[1,2,3-cd]pyrene (µg/kg wet)
1	river	FI0079	10/7/2004	1	2.0 *J*	0.99 *J*	6.4 *U*	9.3 *U*	5,500 *U*	9.3 *U*	0.42 *J*
1	river	FI0080	10/7/2004	2	1.9 *J*	1.2 *J*	6.5 *U*	9.4 *U*	5,500 *U*	9.4 *U*	0.077 *U*
1	river	FI0081	10/7/2004	3	2.2 *J*	1.2 *J*	6.5 *U*	9.3 *U*	5,500 *U*	9.3 *U*	0.28 *J*
2	river	FI0082	10/7/2004	1	2.1 *J*	0.78 *J*	6.5 *U*	9.3 *U*	5,500 *U*	9.3 *U*	0.56 *J*
2	river	FI0083	10/7/2004	2	1.6 *J*	1.3 *J*	6.2 *U*	8.9 *U*	5,200 *U*	8.9 *U*	0.077 *U*
2	river	FI0084	10/7/2004	3	2.1 *J*	0.97 *J*	6.5 *U*	9.3 *U*	5,500 *U*	9.3 *U*	0.33 *J*
3	river	FI0085	10/7/2004	1	1.6 *J*	1.3 *J*	150 *U*	210 *U*	130,000 *U*	210 *U*	0.077 *U*
3	river	FI0086	10/7/2004	2	2.0 *J*	1.4 *J*	99 *U*	150 *U*	84,000 *U*	150 *U*	0.29 *J*
3	river	FI0087	10/7/2004	3	2.3 *J*	1.2 *J*	6.3 *U*	9.0 *U*	5,300 *U*	9.0 *U*	0.29 *J*
4	river	FI0088	10/7/2004	1	1.5 *J*	1.1 *J*	6.1 *U*	8.8 *U*	5,200 *U*	8.8 *U*	0.077 *U*
4	river	FI0089	10/7/2004	2	3.2 *J*	1.4 *J*	6.5 *U*	9.3 *U*	5,500 *U*	9.3 *U*	0.59 *J*
4	river	FI0090	10/7/2004	3	1.9 *J*	0.95 *J*	6.6 *U*	9.5 *U*	5,600 *U*	9.5 *U*	0.076 *U*
5	river	FI0091	10/7/2004	1	1.8 *J*	0.84 *J*	6.4 *U*	9.2 *U*	5,400 *U*	9.2 *U*	0.29 *J*
5	river	FI0092	10/7/2004	2	4.8 *J*	1.3 *J*	6.5 *U*	9.4 *U*	5,600 *U*	9.4 *U*	3.7 *J*
5	river	FI0093	10/7/2004	3	2.2 *J*	1.1 *J*	6.4 *U*	9.2 *U*	5,400 *U*	9.2 *U*	0.48 *J*
6	river	FI0094	10/7/2004	1	1.8 *J*	1.0 *J*	6.5 *U*	9.3 *U*	5,500 *U*	9.3 *U*	0.35 *J*
6	river	FI0095	10/7/2004	2	2.2 *J*	1.2 *J*	6.6 *U*	9.5 *U*	5,600 *U*	9.5 *U*	0.37 *J*
6	river	FI0096	10/7/2004	3	2.4 *J*	1.3 *J*	6.5 *U*	9.4 *U*	5,600 *U*	9.4 *U*	0.26 *J*
7R	river	FI0097	10/7/2004	1	2.4 *J*	1.3 *J*	6.3 *U*	9.0 *U*	5,300 *U*	9.0 *U*	0.58 *J*
7R	river	FI0098	10/7/2004	2	2.7 *J*	1.7 *J*	6.6 *U*	9.5 *U*	5,600 *U*	9.5 *U*	0.49 *J*
7R	river	FI0099	10/7/2004	3	62	2.0 *J*	65 *U*	93 *U*	55,000 *U*	93 *U*	3.2 *J*
8	river	FI0100	10/7/2004	1	2.2 *J*	0.66 *J*	64 *U*	92 *U*	54,000 *U*	92 *U*	0.82 *J*
8	river	FI0101	10/7/2004	2	3.7 *J*	1.1 *J*	63 *U*	90 *U*	53,000 *U*	90 *U*	1.8 *J*
8	river	FI0102	10/7/2004	3	3.6 *J*	1.3 *J*	63 *U*	90 *U*	53,000 *U*	90 *U*	1.6 *J*
9	river	FI0103	10/7/2004	1	1.2 *J*	0.87 *J*	63 *U*	91 *U*	54,000 *U*	91 *U*	0.26 *J*
9	river	FI0104	10/7/2004	2	1.6 *J*	0.47 *J*	62 *U*	89 *U*	53,000 *U*	89 *U*	0.99 *J*
9	river	FI0105	10/7/2004	3	2.4 *J*	1.0 *J*	64 *U*	93 *U*	55,000 *U*	93 *U*	0.74 *J*
10	river	FI0106	10/7/2004	1	1.5 *J*	0.71 *J*	63 *U*	91 *U*	54,000 *U*	91 *U*	0.21 *J*
10	river	FI0107	10/7/2004	2	1.4 *J*	0.81 *J*	64 *U*	92 *U*	54,000 *U*	92 *U*	0.33 *J*
10	river	FI0108	10/7/2004	3	1.6 *J*	0.77 *J*	64 *U*	92 *U*	54,000 *U*	92 *U*	0.57 *J*
AQUAREF1	Rriver	FI0109	10/7/2004	1	1.9 *J*	1.2 *J*	63 *U*	91 *U*	54,000 *U*	91 *U*	0.081 *U*
AQUAREF1	Rriver	FI0110	10/7/2004	2	2.6 *J*	1.2 *J*	65 *U*	94 *U*	55,000 *U*	94 *U*	0.55 *J*
AQUAREF1	Rriver	FI0111	10/7/2004	3	2.1 *J*	0.84 *J*	63 *U*	91 *U*	54,000 *U*	91 *U*	0.61 *J*
AQUAREF4	Rriver	FI0112	10/7/2004	1	1.9 *J*	0.82 *J*	64 *U*	92 *U*	54,000 *U*	92 *U*	0.41 *J*
AQUAREF4	Rriver	FI0113	10/7/2004	2	2.8 *J*	0.92 *J*	63 *U*	91 *U*	54,000 *U*	91 *U*	0.89 *J*

Table C-23. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Isophorone (µg/kg wet)	Naphthalene (µg/kg wet)	Nitrobenzene (µg/kg wet)	*N*-nitroso-di-*n*-propylamine (µg/kg wet)	*N*-nitroso-diphenylamine (µg/kg wet)
1	river	FI0079	10/7/2004	1	6.3 *U*	5.5 *U*	11 *U*	8.9 *U*	11 *U*
1	river	FI0080	10/7/2004	2	6.4 *U*	6.1 *U*	11 *U*	9.0 *U*	11 *U*
1	river	FI0081	10/7/2004	3	6.4 *U*	6.0 *U*	11 *U*	9.0 *U*	11 *U*
2	river	FI0082	10/7/2004	1	6.4 *U*	6.4 *U*	11 *U*	9.0 *U*	11 *U*
2	river	FI0083	10/7/2004	2	6.1 *U*	11 *U*	11 *U*	8.5 *U*	9.9 *U*
2	river	FI0084	10/7/2004	3	6.4 *U*	4.2 *U*	11 *U*	9.0 *U*	11 *U*
3	river	FI0085	10/7/2004	1	150 *U*	6.0 *U*	250 *U*	210 *U*	240 *U*
3	river	FI0086	10/7/2004	2	98 *U*	11 *U*	170 *U*	140 *U*	160 *U*
3	river	FI0087	10/7/2004	3	6.1 *U*	4.1 *U*	11 *U*	8.7 *U*	10 *U*
4	river	FI0088	10/7/2004	1	6.0 *U*	5.4 *U*	11 *U*	8.5 *U*	9.8 *U*
4	river	FI0089	10/7/2004	2	68	7.0 *U*	11 *U*	9.0 *U*	11 *U*
4	river	FI0090	10/7/2004	3	6.5 *U*	5.9 *U*	12 *U*	9.2 *U*	11 *U*
5	river	FI0091	10/7/2004	1	6.3 *U*	6.6 *U*	11 *U*	8.9 *U*	11 *U*
5	river	FI0092	10/7/2004	2	6.4 *U*	5.0 *U*	12 *U*	9.1 *U*	11 *U*
5	river	FI0093	10/7/2004	3	6.3 *U*	6.5 *U*	11 *U*	8.9 *U*	11 *U*
6	river	FI0094	10/7/2004	1	6.4 *U*	5.7 *U*	11 *U*	9.0 *U*	11 *U*
6	river	FI0095	10/7/2004	2	6.5 *U*	9.7 *U*	12 *U*	9.2 *U*	11 *U*
6	river	FI0096	10/7/2004	3	6.4 *U*	4.8 *U*	12 *U*	9.1 *U*	11 *U*
7R	river	FI0097	10/7/2004	1	6.2 *U*	9.0 *U*	11 *U*	8.7 *U*	11 *U*
7R	river	FI0098	10/7/2004	2	6.5 *U*	9.3 *U*	12 *U*	9.1 *U*	11 *U*
7R	river	FI0099	10/7/2004	3	64 *U*	4.2 *U*	110 *U*	90 *U*	110 *U*
8	river	FI0100	10/7/2004	1	63 *U*	3.9 *U*	110 *U*	88 *U*	110 *U*
8	river	FI0101	10/7/2004	2	62 *U*	4.4 *U*	110 *U*	87 *U*	110 *U*
8	river	FI0102	10/7/2004	3	62 *U*	4.4 *U*	110 *U*	87 *U*	110 *U*
9	river	FI0103	10/7/2004	1	62 *U*	4.1 *U*	110 *U*	88 *U*	110 *U*
9	river	FI0104	10/7/2004	2	61 *U*	2.8 *U*	110 *U*	86 *U*	100 *U*
9	river	FI0105	10/7/2004	3	63 *U*	3.5 *U*	110 *U*	89 *U*	110 *U*
10	river	FI0106	10/7/2004	1	62 *U*	4.2 *U*	110 *U*	87 *U*	110 *U*
10	river	FI0107	10/7/2004	2	63 *U*	5.3 *U*	110 *U*	89 *U*	110 *U*
10	river	FI0108	10/7/2004	3	63 *U*	4.3 *U*	110 *U*	89 *U*	110 *U*
AQUAREF1	Rriver	FI0109	10/7/2004	1	62 *U*	6.8 *U*	110 *U*	88 *U*	110 *U*
AQUAREF1	Rriver	FI0110	10/7/2004	2	64 *U*	3.3 *U*	110 *U*	90 *U*	110 *U*
AQUAREF1	Rriver	FI0111	10/7/2004	3	62 *U*	4.2 *U*	110 *U*	88 *U*	110 *U*
AQUAREF4	Rriver	FI0112	10/7/2004	1	63 *U*	4.0 *U*	110 *U*	88 *U*	110 *U*
AQUAREF4	Rriver	FI0113	10/7/2004	2	62 *U*	5.3 *U*	110 *U*	88 *U*	110 *U*

Table C-23. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Pentachloro-phenol (µg/kg wet)	Phenanthrene (µg/kg wet)	Phenol (µg/kg wet)	Pyrene (µg/kg wet)	Total PAHs (µg/kg wet)
1	river	FI0079	10/7/2004	1	520 *U*	1.8 *J*	95 *J*	1.5 *J*	16 *J*
1	river	FI0080	10/7/2004	2	34 *U*	1.8 *J*	490	1.5 *J*	14 *J*
1	river	FI0081	10/7/2004	3	34 *U*	2.0 *J*	99 *J*	1.7 *J*	17 *J*
2	river	FI0082	10/7/2004	1	34 *U*	1.5 *J*	76 *J*	1.7 *J*	17 *J*
2	river	FI0083	10/7/2004	2	33 *U*	1.8 *J*	120	0.073 *U*	17 *J*
2	river	FI0084	10/7/2004	3	34 *U*	1.8 *J*	260	1.7 *J*	15 *J*
3	river	FI0085	10/7/2004	1	770 *U*	1.3 *J*	420 *U*	0.074 *U*	12 *J*
3	river	FI0086	10/7/2004	2	530 *U*	2.1 *J*	290 *U*	1.4 *J*	20 *J*
3	river	FI0087	10/7/2004	3	33 *U*	1.9 *J*	220	1.8 *J*	15 *J*
4	river	FI0088	10/7/2004	1	32 *U*	1.7 *J*	18 *U*	1.0 *J*	13 *J*
4	river	FI0089	10/7/2004	2	34 *U*	3.9 *J*	19 *U*	2.5 *J*	25 *J*
4	river	FI0090	10/7/2004	3	35 *U*	1.6 *J*	78 *J*	1.4 *J*	14 *J*
5	river	FI0091	10/7/2004	1	34 *U*	1.5 *J*	300	1.3 *J*	15 *J*
5	river	FI0092	10/7/2004	2	35 *U*	2.6 *J*	19 *U*	4.8 *J*	61 *J*
5	river	FI0093	10/7/2004	3	34 *U*	1.9 *J*	38 *J*	2.3 *J*	19 *J*
6	river	FI0094	10/7/2004	1	34 *U*	1.7 *J*	74 *J*	1.3 *J*	16 *J*
6	river	FI0095	10/7/2004	2	35 *U*	2.0 *J*	19 *U*	1.6 *J*	20 *J*
6	river	FI0096	10/7/2004	3	35 *U*	1.8 *J*	19 *U*	2.0 *J*	15 *J*
7R	river	FI0097	10/7/2004	1	33 *U*	3.1 *J*	200	2.3 *J*	23 *J*
7R	river	FI0098	10/7/2004	2	35 *U*	2.6 *J*	19 *U*	2.3 *J*	22 *J*
7R	river	FI0099	10/7/2004	3	340 *U*	19	190 *U*	43	190 *J*
8	river	FI0100	10/7/2004	1	340 *U*	1.2 *J*	190 *U*	2.0 *J*	17 *J*
8	river	FI0101	10/7/2004	2	330 *U*	2.3 *J*	180 *U*	3.5 *J*	30 *J*
8	river	FI0102	10/7/2004	3	330 *U*	2.4 *J*	180 *U*	3.4 *J*	29 *J*
9	river	FI0103	10/7/2004	1	330 *U*	1.1 *J*	190 *U*	0.98 *J*	12 *J*
9	river	FI0104	10/7/2004	2	330 *U*	0.84 *J*	180 *U*	1.4 *J*	14 *J*
9	river	FI0105	10/7/2004	3	340 *U*	1.6 *J*	190 *U*	2.2 *J*	19 *J*
10	river	FI0106	10/7/2004	1	330 *U*	1.2 *J*	910 *J*	1.3 *J*	12 *J*
10	river	FI0107	10/7/2004	2	340 *U*	1.3 *J*	190 *U*	1.1 *J*	13 *J*
10	river	FI0108	10/7/2004	3	340 *U*	1.3 *J*	190 *U*	1.5 *J*	13 *J*
AQUAREF1	Rriver	FI0109	10/7/2004	1	330 *U*	1.4 *J*	510 *J*	1.3 *J*	16 *J*
AQUAREF1	Rriver	FI0110	10/7/2004	2	340 *U*	1.8 *J*	190 *U*	2.0 *J*	17 *J*
AQUAREF1	Rriver	FI0111	10/7/2004	3	340 *U*	1.3 *J*	190 *U*	1.6 *J*	17 *J*
AQUAREF4	Rriver	FI0112	10/7/2004	1	340 *U*	1.4 *J*	270 *J*	1.6 *J*	13 *J*
AQUAREF4	Rriver	FI0113	10/7/2004	2	340 *U*	1.8 *J*	190 *U*	2.6 *J*	23 *J*

Note: Estuarine fish samples were analyzed as whole body composites.

PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table C-24. Pesticide/PCB results for estuarine fishes

Station	Zone	Sample Number	Date	Field Replicate	4,4'-DDD (µg/kg wet)	4,4'-DDE (µg/kg wet)	4,4'-DDT (µg/kg wet)	Aldrin (µg/kg wet)	α-Chlordane (µg/kg wet)	α-Endosulfan (µg/kg wet)	α-Hexachloro-cyclohexane (µg/kg wet)
1	river	FI0079	10/7/2004	1	26	30	13 *U*	1.3 *U*	4.0	4.4 *J*	0.17 *U*
1	river	FI0080	10/7/2004	2	26	24	12 *U*	2.8 *J*	2.4 *J*	3.0 *J*	0.23 *J*
1	river	FI0081	10/7/2004	3	26	24	13 *U*	1.1 *U*	2.5 *J*	2.9 *J*	0.17 *U*
2	river	FI0082	10/7/2004	1	25	23	13 *U*	1.2 *U*	2.1 *J*	2.6	0.17 *U*
2	river	FI0083	10/7/2004	2	36	32	16 *U*	1.3 *U*	2.6 *J*	3.4 *J*	0.17 *U*
2	river	FI0084	10/7/2004	3	25	25	14 *U*	3.3 *J*	2.1 *J*	2.7	0.17 *U*
3	river	FI0085	10/7/2004	1	31	30	16 *U*	1.5 *U*	3.1 *J*	3.9 *J*	0.17 *U*
3	river	FI0086	10/7/2004	2	27	24	15 *U*	1.1 *U*	2.1 *J*	2.6	0.17 *U*
3	river	FI0087	10/7/2004	3	28	35	16 *U*	1.2 *U*	3.7	5.5 *J*	0.17 *U*
4	river	FI0088	10/7/2004	1	32	34	16 *U*	1.1 *U*	3.6 *J*	4.4 *J*	0.17 *U*
4	river	FI0089	10/7/2004	2	28	31	15 *U*	1.1 *U*	3.1 *J*	4.0 *J*	0.17 *U*
4	river	FI0090	10/7/2004	3	29	34	16 *U*	1.1 *U*	3.4 *J*	4.3 *J*	0.17 *U*
5	river	FI0091	10/7/2004	1	25	30	14 *U*	1.1 *U*	3.0	4.0 *J*	0.17 *U*
5	river	FI0092	10/7/2004	2	26	28	14 *U*	1.1 *U*	3.2 *J*	3.9 *J*	0.17 *U*
5	river	FI0093	10/7/2004	3	28	33	16 *U*	1.1 *U*	3.4 *J*	4.3 *J*	0.17 *U*
6	river	FI0094	10/7/2004	1	24	27 *J*	9.2 *J*	1.1 *U*	2.6	1.1 *U*	0.17 *U*
6	river	FI0095	10/7/2004	2	29	34 *J*	12	1.1 *U*	3.0	1.1 *U*	0.17 *U*
6	river	FI0096	10/7/2004	3	32 *J*	34 *J*	9.8 *J*	1.4 *U*	3.2	1.1 *U*	0.17 *U*
7R	river	FI0097	10/7/2004	1	25	29 *J*	8.6 *J*	2.1 *J*	2.6	1.1 *U*	0.17 *U*
7R	river	FI0098	10/7/2004	2	26	31	11	2.1 *J*	3.6	1.1 *U*	0.17 *U*
7R	river	FI0099	10/7/2004	3	25	31 *J*	10	1.4 *J*	2.9	1.3 *U*	0.17 *U*
8	river	FI0100	10/7/2004	1	15	20	8.6	1.1 *U*	2.2	1.1 *U*	0.17 *U*
8	river	FI0101	10/7/2004	2	18	24	9.5	1.3 *J*	3.0	1.1 *U*	0.17 *U*
8	river	FI0102	10/7/2004	3	21	26 *J*	9.4	0.88 *U*	2.7 *J*	3.6	1.1 *U*
9	river	FI0103	10/7/2004	1	19	25 *J*	10	0.55 *U*	2.2	1.1 *U*	0.17 *U*
9	river	FI0104	10/7/2004	2	16	24	9.2	1.2 *U*	2.4	4.0 *J*	0.17 *U*
9	river	FI0105	10/7/2004	3	16	25 *J*	9.6 *J*	1.2	2.4 *J*	4.4 *J*	0.17 *U*
10	river	FI0106	10/7/2004	1	24	30 *J*	10	1.1 *U*	2.9	1.1 *U*	0.17 *U*
10	river	FI0107	10/7/2004	2	25	31 *J*	11	1.1 *U*	3.2 *J*	1.1 *U*	0.17 *U*
10	river	FI0108	10/7/2004	3	22	29 *J*	9.9	1.1 *U*	2.8	1.1 *U*	1.5 *U*
AQUAREF1	Rriver	FI0109	10/7/2004	1	30	33 *J*	10	1.3 *U*	3.1	1.1 *U*	0.17 *U*
AQUAREF1	Rriver	FI0110	10/7/2004	2	32	32 *J*	9.9	0.89 *U*	3.3	1.1 *U*	0.27 *U*
AQUAREF1	Rriver	FI0111	10/7/2004	3	24	29 *J*	8.8 *J*	2.3 *J*	3.0	5.3 *J*	0.57 *U*
AQUAREF4	Rriver	FI0112	10/7/2004	1	20	23 *J*	7.6	0.66 *U*	2.0	1.1 *U*	0.17 *U*
AQUAREF4	Rriver	FI0113	10/7/2004	2	21	24 *J*	8.4	0.56 *U*	2.4	1.1 *U*	0.23 *U*

Table C-24. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	β-Endosulfan (µg/kg wet)	β-Hexachloro-cyclohexane (µg/kg wet)	δ-Hexachloro-cyclohexane (µg/kg wet)	Dieldrin (µg/kg wet)	Endosulfan Sulfate (µg/kg wet)	Endrin (µg/kg wet)	Endrin Aldehyde (µg/kg wet)
1	river	FI0079	10/7/2004	1	1.1 *U*	2.7 *U*	0.86 *J*	3.7	0.28 *U*	0.94 *J*	1.1 *U*
1	river	FI0080	10/7/2004	2	1.1 *U*	1.1 *U*	1.1 *U*	4.6	0.28 *U*	1.0 *J*	1.1 *U*
1	river	FI0081	10/7/2004	3	1.1 *U*	2.8 *U*	1.0 *J*	3.7 *J*	0.28 *U*	1.1 *J*	1.1 *U*
2	river	FI0082	10/7/2004	1	1.1 *U*	1.1 *U*	1.4 *J*	2.8	1.1 *U*	1.2	1.3 *J*
2	river	FI0083	10/7/2004	2	1.1 *U*	1.1 *U*	1.3 *J*	4.1 *J*	0.28 *U*	1.6	1.2 *U*
2	river	FI0084	10/7/2004	3	1.1 *U*	2.4 *U*	1.4 *J*	3.4	0.28 *U*	1.2 *U*	2.8 *J*
3	river	FI0085	10/7/2004	1	1.1 *U*	1.2 *J*	1.1 *U*	3.8	1.1 *U*	1.2 *J*	1.1 *U*
3	river	FI0086	10/7/2004	2	1.1 *U*	2.3 *J*	1.1 *U*	2.8	0.28 *U*	0.56 *U*	3.2 *J*
3	river	FI0087	10/7/2004	3	1.1 *U*	1.1 *U*	1.1 *U*	3.4	0.28 *U*	1.5 *J*	3.4 *J*
4	river	FI0088	10/7/2004	1	1.1 *U*	2.3	0.35 *U*	3.4 *J*	0.28 *U*	1.7 *J*	3.6 *J*
4	river	FI0089	10/7/2004	2	1.1 *U*	0.22 *U*	1.1 *U*	2.8	0.29 *U*	1.1 *U*	3.4 *J*
4	river	FI0090	10/7/2004	3	1.1 *U*	0.22 *U*	0.36 *U*	3.2	0.29 *U*	1.5 *J*	3.7 *J*
5	river	FI0091	10/7/2004	1	0.37 *U*	1.1	0.36 *U*	2.4	0.29 *U*	1.2 *U*	3.0 *J*
5	river	FI0092	10/7/2004	2	1.1 *U*	0.22 *U*	0.36 *U*	2.6	0.29 *U*	1.1 *U*	2.9 *J*
5	river	FI0093	10/7/2004	3	1.1 *U*	0.22 *U*	0.36 *U*	2.9	0.28 *U*	1.1 *U*	3.3 *J*
6	river	FI0094	10/7/2004	1	0.36 *U*	1.5 *U*	1.4 *U*	2.9 *J*	1.3	1.4	1.1 *U*
6	river	FI0095	10/7/2004	2	0.37 *U*	1.1 *U*	1.1	3.0 *J*	1.1 *U*	2.3	1.1 *U*
6	river	FI0096	10/7/2004	3	0.37 *U*	1.1 *U*	0.36 *U*	3.3 *J*	1.6 *J*	2.6 *J*	1.1 *U*
7R	river	FI0097	10/7/2004	1	0.37 *U*	1.1 *U*	0.35 *J*	2.4 *J*	0.28 *U*	1.4 *J*	1.1 *U*
7R	river	FI0098	10/7/2004	2	0.37 *U*	1.1 *U*	1.8 *J*	2.9 *J*	1.1 *U*	1.1 *U*	1.1 *U*
7R	river	FI0099	10/7/2004	3	0.37 *U*	1.1 *U*	1.8 *J*	2.8 *J*	1.1 *U*	1.4 *J*	1.1 *U*
8	river	FI0100	10/7/2004	1	1.1 *U*	1.5 *U*	0.36 *U*	1.1 *U*	0.92 *U*	1.1 *U*	1.1 *U*
8	river	FI0101	10/7/2004	2	0.37 *U*	1.1 *U*	0.63	1.1 *U*	3.6 *U*	0.78 *J*	1.1 *U*
8	river	FI0102	10/7/2004	3	0.36 *U*	1.1 *U*	0.35 *U*	2.6 *J*	1.5 *U*	0.94 *J*	1.1 *U*
9	river	FI0103	10/7/2004	1	1.1 *U*	1.1 *U*	1.1 *U*	2.2 *J*	1.1 *U*	1.4 *J*	1.1 *U*
9	river	FI0104	10/7/2004	2	3.1 *J*	1.1 *U*	0.42 *J*	1.6 *J*	0.41 *U*	1.5	2.2
9	river	FI0105	10/7/2004	3	1.1 *U*	1.1 *U*	1.0 *J*	1.1 *U*	1.1 *U*	1.6 *J*	0.18 *U*
10	river	FI0106	10/7/2004	1	0.37 *U*	1.1 *U*	0.36 *U*	2.4 *J*	1.0 *J*	1.1 *U*	2.0 *J*
10	river	FI0107	10/7/2004	2	1.1 *U*	2.7 *U*	1.5	2.1 *J*	1.4 *J*	3.6 *J*	2.0 *U*
10	river	FI0108	10/7/2004	3	1.1 *U*	1.3 *U*	0.36 *U*	1.9 *J*	1.2 *J*	2.6 *J*	0.47 *J*
AQUAREF1	Rriver	FI0109	10/7/2004	1	1.1 *U*	1.1 *U*	0.36 *U*	3.2 *J*	0.28 *U*	0.85 *U*	1.1 *U*
AQUAREF1	Rriver	FI0110	10/7/2004	2	1.1 *U*	1.1 *U*	1.4 *J*	3.3 *J*	1.6 *U*	1.1 *U*	3.6 *J*
AQUAREF1	Rriver	FI0111	10/7/2004	3	1.1 *U*	1.4 *U*	0.36 *U*	3.1 *J*	2.1 *U*	1.6	1.1 *U*
AQUAREF4	Rriver	FI0112	10/7/2004	1	0.37 *U*	1.1 *U*	0.36 *U*	2.4 *J*	1.2 *U*	1.2 *U*	1.3 *J*
AQUAREF4	Rriver	FI0113	10/7/2004	2	0.37 *U*	1.1 *U*	1.3	2.3 *J*	1.2 *J*	1.3 *U*	1.1 *U*

Table C-24. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Endrin Ketone (µg/kg wet)	γ-Chlordane (µg/kg wet)	γ-Hexachloro-cyclohexane (µg/kg wet)	Heptachlor (µg/kg wet)	Heptachlor Epoxide (µg/kg wet)	Methoxychlor (µg/kg wet)	Toxaphene (µg/kg wet)
1	river	FI0079	10/7/2004	1	1.1 *U*	7.4	0.29 *U*	3.9 *U*	4.4	3.9 *J*	97 *U*
1	river	FI0080	10/7/2004	2	1.1 *U*	5.8	0.66 *U*	4.7 *U*	4.0 *J*	1.1 *U*	150 *U*
1	river	FI0081	10/7/2004	3	1.4 *U*	6.9	0.29 *U*	1.6 *U*	4.1	1.1 *U*	160 *U*
2	river	FI0082	10/7/2004	1	1.5 *U*	7.1	0.30 *U*	8.4 *U*	4.6	1.4 *U*	190 *U*
2	river	FI0083	10/7/2004	2	1.7 *U*	8.0	0.29 *U*	2.7 *U*	5.5 *J*	1.6 *U*	190 *U*
2	river	FI0084	10/7/2004	3	1.6 *U*	7.5	0.29 *U*	3.1 *U*	4.7	1.1 *U*	150 *U*
3	river	FI0085	10/7/2004	1	1.5 *U*	8.0	0.29 *U*	2.7 *U*	5.5	1.1 *U*	170 *U*
3	river	FI0086	10/7/2004	2	1.9 *U*	8.8	0.29 *U*	1.1 *U*	5.9	5.4 *J*	210 *U*
3	river	FI0087	10/7/2004	3	1.9 *U*	9.7	0.29 *U*	1.1 *U*	5.8 *U*	4.6 *J*	200 *U*
4	river	FI0088	10/7/2004	1	1.9 *U*	10	0.29 *U*	0.46 *U*	6.0 *J*	4.9 *J*	210 *U*
4	river	FI0089	10/7/2004	2	2.0 *U*	9.5	0.30 *U*	0.47 *U*	6.4	6.9 *J*	200 *U*
4	river	FI0090	10/7/2004	3	2.1 *U*	11	0.30 *U*	1.1 *U*	6.2	5.4 *J*	180 *U*
5	river	FI0091	10/7/2004	1	1.9 *U*	8.3	0.30 *U*	1.7 *U*	4.5	1.1 *U*	200 *U*
5	river	FI0092	10/7/2004	2	1.9 *U*	7.2	0.30 *U*	1.5 *U*	4.5	3.9 *J*	190 *U*
5	river	FI0093	10/7/2004	3	2.0 *U*	8.5	0.30 *U*	0.47 *U*	5.0	4.3 *J*	190 *U*
6	river	FI0094	10/7/2004	1	6.0 *U*	5.0 *J*	1.1 *U*	1.1 *U*	2.8 *J*	9.2 *U*	120 *U*
6	river	FI0095	10/7/2004	2	0.31 *U*	6.8	1.1 *U*	1.2	6.6 *J*	9.2 *U*	180 *U*
6	river	FI0096	10/7/2004	3	0.30 *U*	6.3 *J*	0.29 *U*	1.1 *U*	5.5 *J*	9.2 *U*	86 *U*
7R	river	FI0097	10/7/2004	1	0.30 *U*	4.8	1.1 *U*	1.6 *U*	4.3 *J*	1.1 *U*	140 *U*
7R	river	FI0098	10/7/2004	2	0.30 *U*	5.8	1.3 *U*	1.1 *U*	5.2 *J*	1.1 *U*	110 *U*
7R	river	FI0099	10/7/2004	3	0.31 *U*	5.0 *J*	0.30 *U*	1.1 *U*	4.6 *J*	0.83 *U*	98 *U*
8	river	FI0100	10/7/2004	1	6.0 *U*	3.9	0.30 *U*	0.47 *U*	3.0	1.6 *U*	290 *U*
8	river	FI0101	10/7/2004	2	0.30 *U*	4.9 *J*	1.1 *U*	0.47 *U*	3.8	1.1 *U*	270 *U*
8	river	FI0102	10/7/2004	3	0.30 *U*	4.8 *J*	1.1 *U*	1.8 *U*	6.0 *J*	1.1 *U*	97 *U*
9	river	FI0103	10/7/2004	1	0.31 *U*	4.3	1.1 *U*	1.7 *U*	2.2 *J*	1.1 *U*	86 *U*
9	river	FI0104	10/7/2004	2	5.6 *U*	4.3	0.30 *U*	1.7 *U*	4.2	2.6 *U*	61 *U*
9	river	FI0105	10/7/2004	3	0.31 *U*	4.7	1.1 *U*	1.6 *U*	4.7 *J*	9.2 *U*	91 *U*
10	river	FI0106	10/7/2004	1	0.31 *U*	5.7	0.67 *U*	0.47 *U*	6.2 *J*	9.2 *U*	84 *U*
10	river	FI0107	10/7/2004	2	0.30 *U*	5.2	0.40 *U*	1.8 *U*	5.6 *J*	9.2 *U*	130 *U*
10	river	FI0108	10/7/2004	3	0.31 *U*	4.7 *J*	0.66 *J*	1.7 *U*	4.9	1.1 *U*	95 *U*
AQUAREF1	Rriver	FI0109	10/7/2004	1	0.31 *U*	6.1 *J*	1.1 *U*	1.6 *J*	4.4	1.1 *U*	160 *U*
AQUAREF1	Rriver	FI0110	10/7/2004	2	0.31 *U*	5.1 *J*	0.30 *U*	1.5 *U*	4.5	9.2 *U*	110 *U*
AQUAREF1	Rriver	FI0111	10/7/2004	3	0.31 *U*	5.7 *J*	0.30 *U*	0.47 *U*	6.8 *J*	9.2 *U*	180 *U*
AQUAREF4	Rriver	FI0112	10/7/2004	1	5.4 *U*	3.9	1.1 *U*	1.6 *U*	5.3 *J*	1.1 *U*	67 *U*
AQUAREF4	Rriver	FI0113	10/7/2004	2	0.30 *U*	4.2	0.29 *U*	1.1 *U*	5.1 *J*	9.2 *U*	71 *U*

Table C-24. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Aroclor® 1016 (µg/kg wet)	Aroclor® 1221 (µg/kg wet)	Aroclor® 1232 (µg/kg wet)	Aroclor® 1242 (µg/kg wet)	Aroclor® 1248 (µg/kg wet)	Aroclor® 1254 (µg/kg wet)	Aroclor® 1260 (µg/kg wet)	PCBs (µg/kg wet)
1	river	FI0079	10/7/2004	1	2.1 *U*	3.2 *U*	2.1 *U*	3.7 *U*	160	190	160	510
1	river	FI0080	10/7/2004	2	2.1 *U*	3.2 *U*	2.1 *U*	3.7 *U*	130	160	160	450
1	river	FI0081	10/7/2004	3	2.1 *U*	3.2 *U*	2.1 *U*	3.6 *U*	130	170	160	460
2	river	FI0082	10/7/2004	1	2.1 *U*	3.3 *U*	2.1 *U*	3.7 *U*	160	190	170	520
2	river	FI0083	10/7/2004	2	2.1 *U*	3.2 *U*	2.1 *U*	3.6 *U*	190	230	210	630
2	river	FI0084	10/7/2004	3	2.1 *U*	3.3 *U*	2.1 *U*	3.7 *U*	150	190	170	510
3	river	FI0085	10/7/2004	1	2.1 *U*	3.2 *U*	2.1 *U*	3.7 *U*	170	220	200	590
3	river	FI0086	10/7/2004	2	2.1 *U*	3.2 *U*	2.1 *U*	3.6 *U*	190	230	180	600
3	river	FI0087	10/7/2004	3	2.1 *U*	3.2 *U*	2.1 *U*	3.6 *U*	200	240	190	630
4	river	FI0088	10/7/2004	1	2.1 *U*	3.2 *U*	2.1 *U*	3.6 *U*	210	250	200	660
4	river	FI0089	10/7/2004	2	2.1 *U*	3.3 *U*	2.1 *U*	3.7 *U*	220	260	190	670
4	river	FI0090	10/7/2004	3	2.1 *U*	3.3 *U*	2.1 *U*	3.7 *U*	210	250	200	660
5	river	FI0091	10/7/2004	1	2.1 *U*	3.3 *U*	2.1 *U*	3.7 *U*	150	200	160	510
5	river	FI0092	10/7/2004	2	2.1 *U*	3.3 *U*	2.1 *U*	3.7 *U*	140	180	150	470
5	river	FI0093	10/7/2004	3	2.1 *U*	3.3 *U*	2.1 *U*	3.7 *U*	150	200	170	520
6	river	FI0094	10/7/2004	1	2.1 *U*	3.2 *U*	2.1 *U*	3.6 *U*	170	260	220	650
6	river	FI0095	10/7/2004	2	2.1 *U*	3.3 *U*	2.1 *U*	3.7 *U*	230	310	270	810
6	river	FI0096	10/7/2004	3	2.1 *U*	3.3 *U*	2.1 *U*	3.7 *U*	230	310	240	780
7R	river	FI0097	10/7/2004	1	2.1 *U*	3.2 *U*	2.1 *U*	3.7 *U*	170	240	200	610
7R	river	FI0098	10/7/2004	2	2.1 *U*	3.3 *U*	2.1 *U*	3.7 *U*	170	260	230 *J*	660 *J*
7R	river	FI0099	10/7/2004	3	2.1 *U*	3.3 *U*	2.1 *U*	3.7 *U*	160	240	220 *J*	620 *J*
8	river	FI0100	10/7/2004	1	2.1 *U*	3.3 *U*	2.1 *U*	3.7 *U*	120	180	160	460
8	river	FI0101	10/7/2004	2	2.1 *U*	3.2 *U*	2.1 *U*	3.7 *U*	140	220	210	570
8	river	FI0102	10/7/2004	3	2.1 *U*	3.2 *U*	2.1 *U*	3.6 *U*	150	230	200	580
9	river	FI0103	10/7/2004	1	2.1 *U*	3.3 *U*	2.1 *U*	3.7 *U*	130	200	200	530
9	river	FI0104	10/7/2004	2	2.1 *U*	3.3 *U*	2.1 *U*	3.7 *U*	120	180	170	470
9	river	FI0105	10/7/2004	3	2.1 *U*	3.3 *U*	2.1 *U*	3.7 *U*	120	210	220	550
10	river	FI0106	10/7/2004	1	2.1 *U*	3.3 *U*	2.1 *U*	3.7 *U*	170	260	220 *J*	650 *J*
10	river	FI0107	10/7/2004	2	2.1 *U*	3.3 *U*	2.1 *U*	3.7 *U*	180	260	230 *J*	670 *J*
10	river	FI0108	10/7/2004	3	2.1 *U*	3.3 *U*	2.1 *U*	3.7 *U*	150	230	210	590
AQUAREF1	Rriver	FI0109	10/7/2004	1	2.1 *U*	3.3 *U*	2.1 *U*	3.7 *U*	170	260	220 *J*	650 *J*
AQUAREF1	Rriver	FI0110	10/7/2004	2	2.1 *U*	3.3 *U*	2.1 *U*	3.7 *U*	170	250	200	620
AQUAREF1	Rriver	FI0111	10/7/2004	3	2.1 *U*	3.3 *U*	2.1 *U*	3.7 *U*	170	260	230 *J*	660 *J*
AQUAREF4	Rriver	FI0112	10/7/2004	1	2.1 *U*	3.3 *U*	2.1 *U*	3.7 *U*	140	200	160	500
AQUAREF4	Rriver	FI0113	10/7/2004	2	2.1 *U*	3.2 *U*	2.1 *U*	3.7 *U*	140	210	170	520

Note: Estuarine fish samples were analyzed as whole body composites.

PCB - polychlorinated biphenyl
Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table C-25. Dioxin and furan results for estuarine fishes

Station	Zone	Sample Number	Date	Field Replicate	2,3,7,8-Tetrachloro-dibenzo-*p*-dioxin (ng/kg wet)	1,2,3,7,8-Pentachloro-dibenzo-*p*-dioxin (ng/kg wet)	1,2,3,4,7,8-Hexachloro-dibenzo-*p*-dioxin (ng/kg wet)	1,2,3,6,7,8-Hexachloro-dibenzo-*p*-dioxin (ng/kg wet)	1,2,3,7,8,9-Hexachloro-dibenzo-*p*-dioxin (ng/kg wet)	1,2,3,4,6,7,8-Heptachloro-dibenzo-*p*-dioxin (ng/kg wet)	Octachloro-dibenzo-*p*-dioxin (ng/kg wet)
8	river	FI0100	10/7/2004	1	0.53	0.15 *J*	0.015 *U*	0.18 *J*	0.016 *U*	1.3 *U*	27
8	river	FI0101	10/7/2004	2	0.52	0.15 *J*	0.045 *U*	0.18 *J*	0.077 *J*	1.7 *J*	37
8	river	FI0102	10/7/2004	3	0.60	0.18 *J*	0.050 *J*	0.23 *J*	0.12 *J*	1.9 *J*	45
9	river	FI0103	10/7/2004	1	0.17 *J*	0.033 *J*	0.011 *U*	0.013 *U*	0.012 *U*	0.19 *U*	2.8 *U*
9	river	FI0104	10/7/2004	2	0.55	0.15 *J*	0.052 *J*	0.24 *J*	0.097 *J*	1.7 *J*	38
9	river	FI0105	10/7/2004	3	0.50	0.13 *J*	0.042 *J*	0.15 *J*	0.063 *J*	1.5 *J*	27
AQUAREF1	Rriver	FI0109	10/7/2004	1	0.55	0.13 *J*	0.013 *U*	0.11 *J*	0.014 *U*	0.30 *U*	3.5 *U*
AQUAREF1	Rriver	FI0110	10/7/2004	2	0.51	0.14 *J*	0.033 *J*	0.11 *J*	0.031 *J*	0.52 *U*	10
AQUAREF1	Rriver	FI0111	10/7/2004	3	0.59	0.17 *J*	0.025 *J*	0.14 *J*	0.031 *J*	0.65 *U*	13

Table C-25. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	2,3,7,8-Tetrachloro-dibenzofuran (ng/kg wet)	1,2,3,7,8-Pentachloro-dibenzofuran (ng/kg wet)	2,3,4,7,8-Pentachloro-dibenzofuran (ng/kg wet)	1,2,3,4,7,8-Hexachloro-dibenzofuran (ng/kg wet)	1,2,3,6,7,8-Hexachloro-dibenzofuran (ng/kg wet)	2,3,4,6,7,8-Hexachloro-dibenzofuran (ng/kg wet)	1,2,3,7,8,9-Hexachloro-dibenzofuran (ng/kg wet)
8	river	FI0100	10/7/2004	1	0.63	0.073 *J*	0.31 *J*	0.11 *J*	0.072 *J*	0.022 *U*	0.022 *U*
8	river	FI0101	10/7/2004	2	0.63	0.083 *J*	0.35 *J*	0.12 *J*	0.062 *J*	0.035 *U*	0.035 *U*
8	river	FI0102	10/7/2004	3	0.59	0.084 *J*	0.40 *J*	0.16 *J*	0.074 *J*	0.013 *U*	0.014 *U*
9	river	FI0103	10/7/2004	1	0.32 *U*	0.012 *U*	0.090 *J*	0.019 *U*	0.021 *U*	0.022 *U*	0.023 *U*
9	river	FI0104	10/7/2004	2	0.50	0.073 *J*	0.38 *J*	0.15 *J*	0.065 *J*	0.018 *U*	0.019 *U*
9	river	FI0105	10/7/2004	3	0.53	0.056 *J*	0.28 *J*	0.095 *J*	0.053 *J*	0.015 *U*	0.014 *U*
AQUAREF1	Rriver	FI0109	10/7/2004	1	0.87	0.066 *J*	0.30 *J*	0.018 *U*	0.019 *U*	0.020 *U*	0.021 *U*
AQUAREF1	Rriver	FI0110	10/7/2004	2	0.54	0.051 *J*	0.28 *J*	0.059 *J*	0.030 *U*	0.031 *U*	0.030 *U*
AQUAREF1	Rriver	FI0111	10/7/2004	3	0.65	0.072 *J*	0.38 *J*	0.065 *J*	0.029 *J*	0.019 *U*	0.018 *U*

Table C-25. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	1,2,3,4,6,7,8-Heptachloro-dibenzofuran (ng/kg wet)	1,2,3,4,7,8,9-Heptachloro-dibenzofuran (ng/kg wet)	Octachloro-dibenzofuran (ng/kg wet)	Total Tetrachloro-dibenzo-*p*-dioxins (ng/kg wet)	Total Pentachloro-dibenzo-*p*-dioxins (ng/kg wet)	Total Hexachloro-dibenzo-*p*-dioxins (ng/kg wet)
8	river	FI0100	10/7/2004	1	0.32 *J*	0.021 *U*	0.62 *U*	0.53	0.15	0.62
8	river	FI0101	10/7/2004	2	0.44 *J*	0.049 *U*	0.78 *U*	0.52	0.15	0.72
8	river	FI0102	10/7/2004	3	0.49 *J*	0.053 *U*	0.87 *U*	0.60	0.18	1.2
9	river	FI0103	10/7/2004	1	0.043 *J*	0.022 *U*	0.068 *U*	0.17	0.018 *U*	0.011 *U*
9	river	FI0104	10/7/2004	2	0.93 *J*	0.034 *U*	0.74 *U*	0.60	0.019 *U*	0.71
9	river	FI0105	10/7/2004	3	0.33 *J*	0.023 *U*	0.89 *U*	0.50	0.13	0.63
AQUAREF1	Rriver	FI0109	10/7/2004	1	0.050 *J*	0.019 *U*	0.074 *U*	0.55	0.15	0.14
AQUAREF1	Rriver	FI0110	10/7/2004	2	0.12 *J*	0.023 *U*	0.20 *U*	0.51	0.14	0.13
AQUAREF1	Rriver	FI0111	10/7/2004	3	0.12 *J*	0.020 *U*	0.19 *U*	0.59	0.17	0.37

Table C-25. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Total Heptachloro-dibenzo-*p*-dioxins (ng/kg wet)	Total Tetrachloro-dibenzofurans (ng/kg wet)	Total Pentachloro-dibenzofurans (ng/kg wet)	Total Hexachloro-dibenzofurans (ng/kg wet)	Total Heptachloro-dibenzofurans (ng/kg wet)
8	river	FI0100	10/7/2004	1	2.6	0.77	0.71	0.28	0.59
8	river	FI0101	10/7/2004	2	3.5	1.1	0.67	0.20	0.85
8	river	FI0102	10/7/2004	3	4.1	1.0	1.0	0.39	0.93
9	river	FI0103	10/7/2004	1	0.19	0.18	0.11	0.019 *U*	0.043
9	river	FI0104	10/7/2004	2	3.6	0.70	0.75	0.31	1.3
9	river	FI0105	10/7/2004	3	2.8	0.63	0.46	0.18	0.77
AQUAREF1	Rriver	FI0109	10/7/2004	1	0.46	0.90	0.60	0.018 *U*	0.050
AQUAREF1	Rriver	FI0110	10/7/2004	2	1.00	0.58	0.56	0.027 *U*	0.20
AQUAREF1	Rriver	FI0111	10/7/2004	3	1.3	0.69	0.74	0.080	0.12

Note: Estuarine fish samples were analyzed as whole body composites.

Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table C-26. Inorganic chemical results for estuarine fishes

Station	Zone	Sample Number	Date	Field Replicate	Aluminum (mg/kg wet)	Antimony (mg/kg wet)	Arsenic (mg/kg wet)	Barium (mg/kg wet)	Beryllium (mg/kg wet)	Cadmium (mg/kg wet)	Chromium (mg/kg wet)
1	river	FI0079	10/7/2004	1	21.5	0.015	0.63	1.0	0.0018 *U*	0.0076	0.13
1	river	FI0080	10/7/2004	2	9.6	0.0060	0.53	0.83	0.0018 *U*	0.0096	0.10
1	river	FI0081	10/7/2004	3	19.9	0.0091	0.62	1.0	0.0018 *U*	0.013	0.076 *U*
2	river	FI0082	10/7/2004	1	31.5	0.014	0.72	1.1	0.0017 *U*	0.0073	0.098
2	river	FI0083	10/7/2004	2	6.8	0.0068	0.63	0.86	0.0018 *U*	0.0078	0.078 *U*
2	river	FI0084	10/7/2004	3	35.8	0.013	0.71	1.0	0.0018 *U*	0.0081	0.076 *U*
3	river	FI0085	10/7/2004	1	7.1	0.0059	0.58	0.91	0.0018 *U*	0.0072	0.077 *U*
3	river	FI0086	10/7/2004	2	34.3	0.012	1.2	1.0	0.0018 *U*	0.0082	0.10
3	river	FI0087	10/7/2004	3	20.9	0.014	1.0	1.1	0.0018 *U*	0.0079	0.077 *U*
4	river	FI0088	10/7/2004	1	8.1	0.010	1.1	0.89	0.0018 *U*	0.0070	0.078 *U*
4	river	FI0089	10/7/2004	2	43.3	0.016	1.4	1.0	0.0017 *U*	0.0080	0.15
4	river	FI0090	10/7/2004	3	12.2	0.0088	1.1	0.91	0.0018 *U*	0.0068	0.075 *U*
5	river	FI0091	10/7/2004	1	42.3	0.011	1.1	1.3	0.0017 *U*	0.0095	0.12
5	river	FI0092	10/7/2004	2	166	0.027	1.2	1.6	0.0058	0.011	0.53
5	river	FI0093	10/7/2004	3	51.5	0.016	1.1	1.1	0.0018 *U*	0.0080	0.13
6	river	FI0094	10/7/2004	1	45.3	0.014	1.1	1.2	0.0018 *U*	0.0097	0.15
6	river	FI0095	10/7/2004	2	58.1	0.014	1.1	1.2	0.0017 *U*	0.0089	0.22
6	river	FI0096	10/7/2004	3	40.8	0.015	1.1	1.3	0.0018 *U*	0.0083	0.20
7R	river	FI0097	10/7/2004	1	46.4	0.0094	0.59	0.95	0.0020	0.0084	0.13
7R	river	FI0098	10/7/2004	2	118	0.013	0.65	1.2	0.0053	0.0092	0.50
7R	river	FI0099	10/7/2004	3	86.0 *J*	0.014	0.64	1.2	0.0050	0.0076	0.22
8	river	FI0100	10/7/2004	1	110 *J*	0.019	0.81	1.3	0.0055	0.010	0.45
8	river	FI0101	10/7/2004	2	212 *J*	0.016	0.90	1.8	0.011	0.011	0.66
8	river	FI0102	10/7/2004	3	242 *J*	0.016	1.0	1.9	0.011	0.014	0.70
9	river	FI0103	10/7/2004	1	37.5 *J*	0.010	0.60	1.2	0.0017 *U*	0.0088	0.074 *U*
9	river	FI0104	10/7/2004	2	174 *J*	0.019	0.80	1.3	0.011	0.011	0.44
9	river	FI0105	10/7/2004	3	85.2 *J*	0.015	0.58	1.3	0.0048	0.0090	0.19
10	river	FI0106	10/7/2004	1	16.8 *J*	0.0075	0.56	1.1	0.0017 *U*	0.0085	0.075 *U*
10	river	FI0107	10/7/2004	2	44.5 *J*	0.010	0.77	0.85	0.0022	0.0073	0.12
10	river	FI0108	10/7/2004	3	55.4 *J*	0.010	0.63	1.0	0.0026	0.0072	0.12
AQUAREF1	Rriver	FI0109	10/7/2004	1	10.9 *J*	0.012	0.47	0.92	0.0018 *U*	0.0078	0.078 *U*
AQUAREF1	Rriver	FI0110	10/7/2004	2	53.9 *J*	0.014	0.60	1.2	0.0028	0.010	0.10
AQUAREF1	Rriver	FI0111	10/7/2004	3	45.8 *J*	0.018	0.70	1.2	0.0020	0.0088	0.10
AQUAREF4	Rriver	FI0112	10/7/2004	1	32.6 *J*	0.010	0.67	1.2	0.0017 *U*	0.012	0.098
AQUAREF4	Rriver	FI0113	10/7/2004	2	55.8 *J*	0.013	0.67	1.5	0.0028	0.0086	0.12

Table C-26. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Cobalt (mg/kg wet)	Copper (mg/kg wet)	Iron (mg/kg wet)	Lead (mg/kg wet)	Manganese (mg/kg wet)	Mercury (mg/kg wet)	Nickel (mg/kg wet)
1	river	FI0079	10/7/2004	1	0.073	3.7	54.7	0.11	6.5	0.018	0.78
1	river	FI0080	10/7/2004	2	0.051	5.4	32.5	0.067	4.5	0.017	0.45
1	river	FI0081	10/7/2004	3	0.065	4.4	52.3	0.11	6.5	0.016	0.53
2	river	FI0082	10/7/2004	1	0.081	3.1	82.2	0.15	7.8	0.018	0.45
2	river	FI0083	10/7/2004	2	0.059	3.9	31.1	0.065	5.0	0.019	0.34
2	river	FI0084	10/7/2004	3	0.078	3.6	84.2	0.14	7.2	0.019	0.42
3	river	FI0085	10/7/2004	1	0.060	3.8	30.1	0.059	5.2	0.023	0.38
3	river	FI0086	10/7/2004	2	0.078	3.4	75.0	0.14	5.8	0.023	0.43
3	river	FI0087	10/7/2004	3	0.069	3.4	58.1	0.12	6.0	0.024	0.41
4	river	FI0088	10/7/2004	1	0.058	3.1	34.4	0.070	4.5	0.027	0.39
4	river	FI0089	10/7/2004	2	0.11	3.7	97.1	0.16	9.3	0.028	0.63
4	river	FI0090	10/7/2004	3	0.067	3.7	40.9	0.072	5.7	0.025	0.38
5	river	FI0091	10/7/2004	1	0.074	3.6	65.5	0.13	6.2	0.026	0.46
5	river	FI0092	10/7/2004	2	0.13	5.0	237	0.42	8.1	0.026	0.60
5	river	FI0093	10/7/2004	3	0.083	4.4	87.8	0.17	6.7	0.026	0.45
6	river	FI0094	10/7/2004	1	0.074	4.4	70.1	0.14	6.4	0.026	0.52
6	river	FI0095	10/7/2004	2	0.085	3.6	86.1	0.17	7.0	0.025	0.46
6	river	FI0096	10/7/2004	3	0.079	4.0	72.1	0.13	5.6	0.024	0.43
7R	river	FI0097	10/7/2004	1	0.078	3.8	78.0	0.13	5.0	0.026	0.46
7R	river	FI0098	10/7/2004	2	0.11	4.6	165	0.24	5.7	0.028	0.63
7R	river	FI0099	10/7/2004	3	0.11	2.8	152	0.25	5.5	0.020	0.59
8	river	FI0100	10/7/2004	1	0.13	4.4	175	0.39	7.4	0.041	0.77
8	river	FI0101	10/7/2004	2	0.18	4.2	295	0.57	11.1	0.035	0.83
8	river	FI0102	10/7/2004	3	0.19	4.7	344	0.62	10.4	0.034	0.73
9	river	FI0103	10/7/2004	1	0.092	3.2	64.2	0.11	5.9	0.024	0.51
9	river	FI0104	10/7/2004	2	0.20	3.7	273	0.47	9.6	0.033	0.71
9	river	FI0105	10/7/2004	3	0.13	3.2	151	0.30	6.8	0.033	0.75
10	river	FI0106	10/7/2004	1	0.068	3.4	47.8	0.094	6.3	0.026	0.49
10	river	FI0107	10/7/2004	2	0.097	3.3	102	0.16	5.9	0.021	0.52
10	river	FI0108	10/7/2004	3	0.10	3.1	108	0.18	7.3	0.024	0.54
AQUAREF1	Rriver	FI0109	10/7/2004	1	0.061	3.2	40.7	0.091	5.3	0.017	0.45
AQUAREF1	Rriver	FI0110	10/7/2004	2	0.093	4.4	103	0.21	6.7	0.021	0.50
AQUAREF1	Rriver	FI0111	10/7/2004	3	0.11	3.8	96.8	0.23	7.3	0.022	0.59
AQUAREF4	Rriver	FI0112	10/7/2004	1	0.083	3.1	78.2	0.15	6.2	0.021	0.53
AQUAREF4	Rriver	FI0113	10/7/2004	2	0.11	2.9	148	0.24	9.9	0.021	0.55

Table C-26. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Selenium (mg/kg wet)	Silver (mg/kg wet)	Thallium (mg/kg wet)	Vanadium (mg/kg wet)	Zinc (mg/kg wet)
1	river	FI0079	10/7/2004	1	0.41	0.068	0.00050	0.35	36.5
1	river	FI0080	10/7/2004	2	0.36	0.075	0.00052 *U*	0.35	35.9
1	river	FI0081	10/7/2004	3	0.37	0.071	0.00051 *U*	0.41	39.6
2	river	FI0082	10/7/2004	1	0.41	0.071	0.00049 *U*	0.43	40.0
2	river	FI0083	10/7/2004	2	0.47	0.076	0.00052 *U*	0.37	37.3
2	river	FI0084	10/7/2004	3	0.52	0.076	0.00050 *U*	0.30	37.3
3	river	FI0085	10/7/2004	1	0.51	0.059	0.00051 *U*	0.31	35.0
3	river	FI0086	10/7/2004	2	0.47	0.072	0.00051 *U*	0.41	39.9
3	river	FI0087	10/7/2004	3	0.44	0.069	0.00051 *U*	0.39	38.5
4	river	FI0088	10/7/2004	1	0.48	0.068	0.00052 *U*	0.36	38.6
4	river	FI0089	10/7/2004	2	0.45	0.073	0.00050	0.45	39.3
4	river	FI0090	10/7/2004	3	0.51	0.069	0.00050 *U*	0.35	38.4
5	river	FI0091	10/7/2004	1	0.55	0.061	0.00050	0.35	39.6
5	river	FI0092	10/7/2004	2	0.53	0.069	0.0017	0.59	39.2
5	river	FI0093	10/7/2004	3	0.60	0.075	0.00050	0.36	39.8
6	river	FI0094	10/7/2004	1	0.58	0.069	0.00051	0.31	39.2
6	river	FI0095	10/7/2004	2	0.57	0.058	0.00098	0.35	38.6
6	river	FI0096	10/7/2004	3	0.59	0.068	0.00050	0.29	40.6
7R	river	FI0097	10/7/2004	1	0.67	0.063	0.00077	0.32	38.5
7R	river	FI0098	10/7/2004	2	0.59	0.073	0.0015	0.47	38.5
7R	river	FI0099	10/7/2004	3	0.42	0.054	0.00096	0.57	37.0
8	river	FI0100	10/7/2004	1	0.47	0.096	0.0012	0.77	37.9
8	river	FI0101	10/7/2004	2	0.48	0.091	0.0017	1.1	40.0
8	river	FI0102	10/7/2004	3	0.50	0.098	0.0022	1.0	39.1
9	river	FI0103	10/7/2004	1	0.49	0.062	0.00049	0.49	38.7
9	river	FI0104	10/7/2004	2	0.45	0.073	0.0015	0.95	34.9
9	river	FI0105	10/7/2004	3	0.40	0.071	0.00097	0.74	38.7
10	river	FI0106	10/7/2004	1	0.38	0.060	0.00050 *U*	0.44	36.9
10	river	FI0107	10/7/2004	2	0.46	0.058	0.00073	0.48	35.0
10	river	FI0108	10/7/2004	3	0.44	0.056	0.00072	0.51	39.4
AQUAREF1	Rriver	FI0109	10/7/2004	1	0.45	0.040	0.00052 *U*	0.35	39.1
AQUAREF1	Rriver	FI0110	10/7/2004	2	0.42	0.062	0.0010	0.47	36.3
AQUAREF1	Rriver	FI0111	10/7/2004	3	0.43	0.047	0.00075	0.54	35.8
AQUAREF4	Rriver	FI0112	10/7/2004	1	0.39	0.061	0.00074	0.45	40.2
AQUAREF4	Rriver	FI0113	10/7/2004	2	0.32	0.060	0.00074	0.51	40.4

Table C-26. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Calcium (mg/kg wet)	Magnesium (mg/kg wet)	Potassium (mg/kg wet)	Sodium (mg/kg wet)
1	river	FI0079	10/7/2004	1	13,500	491	2,870	1,500
1	river	FI0080	10/7/2004	2	10,000	460	3,150	1,540
1	river	FI0081	10/7/2004	3	13,600	500	3,070	1,520
2	river	FI0082	10/7/2004	1	14,000	483	2,950	1,480
2	river	FI0083	10/7/2004	2	12,100	488	3,160	1,580
2	river	FI0084	10/7/2004	3	12,400	489	3,070	1,580
3	river	FI0085	10/7/2004	1	12,700	483	2,900	1,500
3	river	FI0086	10/7/2004	2	11,700	445	2,820	1,340
3	river	FI0087	10/7/2004	3	13,000	482	2,910	1,350
4	river	FI0088	10/7/2004	1	11,900	458	2,930	1,370
4	river	FI0089	10/7/2004	2	12,600	458	2,940	1,340
4	river	FI0090	10/7/2004	3	12,000	479	3,010	1,490
5	river	FI0091	10/7/2004	1	14,700	513	3,010	1,600
5	river	FI0092	10/7/2004	2	13,100	489	2,930	1,660
5	river	FI0093	10/7/2004	3	12,800	478	3,080	1,490
6	river	FI0094	10/7/2004	1	14,000	509	2,970	1,590
6	river	FI0095	10/7/2004	2	14,400	477	2,950	1,460
6	river	FI0096	10/7/2004	3	13,800	489	3,070	1,420
7R	river	FI0097	10/7/2004	1	11,900	487	3,060	1,600
7R	river	FI0098	10/7/2004	2	12,100	473	3,160	1,620
7R	river	FI0099	10/7/2004	3	13,400	464	2,700	1,430
8	river	FI0100	10/7/2004	1	13,800	453	2,630	1,510
8	river	FI0101	10/7/2004	2	17,900	547	2,730	1,440
8	river	FI0102	10/7/2004	3	15,100	520	2,840	1,510
9	river	FI0103	10/7/2004	1	15,500	490	2,940	1,510
9	river	FI0104	10/7/2004	2	14,500	488	2,660	1,530
9	river	FI0105	10/7/2004	3	16,700	511	2,540	1,470
10	river	FI0106	10/7/2004	1	15,000	543	2,610	1,680
10	river	FI0107	10/7/2004	2	12,500	459	2,870	1,410
10	river	FI0108	10/7/2004	3	13,900	456	2,830	1,480
AQUAREF1	Rriver	FI0109	10/7/2004	1	14,000	497	2,900	1,440
AQUAREF1	Rriver	FI0110	10/7/2004	2	12,200	491	2,870	1,480
AQUAREF1	Rriver	FI0111	10/7/2004	3	14,200	485	2,800	1,320
AQUAREF4	Rriver	FI0112	10/7/2004	1	15,000	502	2,740	1,510
AQUAREF4	Rriver	FI0113	10/7/2004	2	15,800	503	2,720	1,390

Note: Inorganic chemical results converted from dry-weight basis.
Estuarine fish samples were analyzed as whole body composites.

Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table C-27. Conventional parameter results for estuarine fishes

Station	Zone	Sample Number	Date	Field Replicate	Lipid (% wet)	Total Solids (dry wt. as percent of wet wt. or volume) (% wet)
1	river	FI0079	10/7/2004	1	2.7	25.2
1	river	FI0080	10/7/2004	2	3.1	26.0
1	river	FI0081	10/7/2004	3	3.0	25.4
2	river	FI0082	10/7/2004	1	2.6	24.4
2	river	FI0083	10/7/2004	2	2.9	26.1
2	river	FI0084	10/7/2004	3	2.8	25.2
3	river	FI0085	10/7/2004	1	3.2	25.7
3	river	FI0086	10/7/2004	2	3.0	25.6
3	river	FI0087	10/7/2004	3	3.0	25.5
4	river	FI0088	10/7/2004	1	3.0	25.9
4	river	FI0089	10/7/2004	2	2.8	24.9
4	river	FI0090	10/7/2004	3	2.8	25.1
5	river	FI0091	10/7/2004	1	2.5	24.9
5	river	FI0092	10/7/2004	2	2.4	24.2
5	river	FI0093	10/7/2004	3	2.7	25.0
6	river	FI0094	10/7/2004	1	2.5	25.6
6	river	FI0095	10/7/2004	2	2.5	24.6
6	river	FI0096	10/7/2004	3	2.9	25.2
7R	river	FI0097	10/7/2004	1	2.5	25.5
7R	river	FI0098	10/7/2004	2	2.5	24.8
7R	river	FI0099	10/7/2004	3	2.2	23.9
8	river	FI0100	10/7/2004	1	1.8	23.7
8	river	FI0101	10/7/2004	2	2.0	24.4
8	river	FI0102	10/7/2004	3	2.2	24.9
9	river	FI0103	10/7/2004	1	2.3	24.5
9	river	FI0104	10/7/2004	2	1.7	24.4
9	river	FI0105	10/7/2004	3	1.7	24.2
10	river	FI0106	10/7/2004	1	2.0	24.9
10	river	FI0107	10/7/2004	2	2.0	24.3
10	river	FI0108	10/7/2004	3	2.0	24.0
AQUAREF1	Rriver	FI0109	10/7/2004	1	3.2	25.9
AQUAREF1	Rriver	FI0110	10/7/2004	2	3.1	25.2
AQUAREF1	Rriver	FI0111	10/7/2004	3	2.6	25.0
AQUAREF4	Rriver	FI0112	10/7/2004	1	2.2	24.5
AQUAREF4	Rriver	FI0113	10/7/2004	2	2.3	24.5

Note: Estuarine fish samples were analyzed as whole body composites.

Rriver - river reference zone

Table C-28. Semivolatile organic compound results for earthworm bioaccumulation test samples

Station	Zone	Sample Number	Date	Field Replicate	2,4,5-Trichlorophenol (µg/kg wet)	2,4,6-Trichlorophenol (µg/kg wet)	2,4-Dichlorophenol (µg/kg wet)	2,4-Dimethylphenol (µg/kg wet)	2,4-Dinitrophenol (µg/kg wet)	2,4-Dinitrotoluene (µg/kg wet)	2,6-Dinitrotoluene (µg/kg wet)
13	marsh	SD0019-EW	10/4/2004	0	360 *U*	290 *U*	390 *U*	420 *U*	740 *U*	280 *U*	230 *U*
TERRREF1	Rmarsh	SD0001-EW	9/28/2004	0	220 *U*	180 *U*	240 *U*	260 *U*	460 *U*	170 *U*	140 *U*
TERRREF3	Rmarsh	SD0021-EW	10/4/2004	0	260 *U*	210 *U*	280 *U*	300 *U*	530 *U*	200 *U*	170 *U*

Station	Zone	Sample Number	Date	Field Replicate	2-Chloro-naphthalene (µg/kg wet)	2-Chlorophenol (µg/kg wet)	2-Methyl-4,6-dinitrophenol (µg/kg wet)	2-Methyl-naphthalene (µg/kg wet)	2-Methylphenol (µg/kg wet)	2-Nitroaniline (µg/kg wet)	2-Nitrophenol (µg/kg wet)
13	marsh	SD0019-EW	10/4/2004	0	190 *U*	360 *U*	480 *U*	2.3 *J*	1,700 *U*	830 *U*	480 *U*
TERRREF1	Rmarsh	SD0001-EW	9/28/2004	0	120 *U*	220 *U*	300 *U*	1.5 *J*	1,100 *U*	520 *U*	300 *U*
TERRREF3	Rmarsh	SD0021-EW	10/4/2004	0	140 *U*	260 *U*	350 *U*	1.6 *J*	1,300 *U*	600 *U*	350 *U*

Table C-28. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	3,3'-Dichloro-benzidine (µg/kg wet)	3-Nitroaniline (µg/kg wet)	4-Bromophenyl ether (µg/kg wet)	4-Chloro-3-methylphenol (µg/kg wet)	4-Chloroaniline (µg/kg wet)	4-Chlorophenyl-phenyl ether (µg/kg wet)	4-Methylphenol (µg/kg wet)
13	marsh	SD0019-EW	10/4/2004	0	25,000 *U*	290 *U*	180 *U*	2,300 *U*	190 *U*	150 *U*	480 *U*
TERRREF1	Rmarsh	SD0001-EW	9/28/2004	0	16,000 *U*	180 *U*	110 *U*	1,500 *U*	120 *U*	90 *U*	300 *U*
TERRREF3	Rmarsh	SD0021-EW	10/4/2004	0	18,000 *U*	210 *U*	130 *U*	1,700 *U*	140 *U*	110 *U*	350 *U*

Station	Zone	Sample Number	Date	Field Replicate	4-Nitroaniline (µg/kg wet)	4-Nitrophenol (µg/kg wet)	Acenaphthene (µg/kg wet)	Acenaph-thylene (µg/kg wet)	Acetophenone (µg/kg wet)	Anthracene (µg/kg wet)	Atrazine (µg/kg wet)
13	marsh	SD0019-EW	10/4/2004	0	830 *U*	240 *U*	0.24 *U*	0.16 *U*	640 *U*	1.6 *J*	180 *U*
TERRREF1	Rmarsh	SD0001-EW	9/28/2004	0	520 *U*	150 *U*	0.51 *J*	1.4 *J*	400 *U*	1.8 *J*	110 *U*
TERRREF3	Rmarsh	SD0021-EW	10/4/2004	0	600 *U*	180 *U*	0.54 *J*	2.0 *J*	460 *U*	2.2 *J*	130 *U*

Table C-28. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Benz[a]-anthracene (µg/kg wet)	Benzaldehyde (µg/kg wet)	Benzo[a]pyrene (µg/kg wet)	Benzo[b]-fluoranthene (µg/kg wet)	Benzo[ghi]-perylene (µg/kg wet)	Benzo[k]-fluoranthene (µg/kg wet)	Biphenyl (µg/kg wet)
13	marsh	SD0019-EW	10/4/2004	0	3.0 *J*	24,000 *UJ*	3.3 *J*	4.8 *J*	2.8 *J*	3.8 *J*	150 *U*
TERRREF1	Rmarsh	SD0001-EW	9/28/2004	0	5.5 *J*	15,000 *UJ*	5.6 *J*	6.6 *J*	4.2 *J*	6.6 *J*	94 *U*
TERRREF3	Rmarsh	SD0021-EW	10/4/2004	0	3.8 *J*	17,000 *UJ*	5.0 *J*	5.4 *J*	4.5 *J*	5.6 *J*	110 *U*

Station	Zone	Sample Number	Date	Field Replicate	Bis[2-chloroethoxy]-methane (µg/kg wet)	Bis[2-chloroethyl]-ether (µg/kg wet)	Bis[2-chloroisopropyl] ether (µg/kg wet)	Bis[2-Ethylhexyl]-phthalate (µg/kg wet)	Butylbenzyl phthalate (µg/kg wet)	Caprolactam (µg/kg wet)	Carbazole (µg/kg wet)
13	marsh	SD0019-EW	10/4/2004	0	160 *U*	280 *U*	360 *U*	1,700 *U*	450 *U*	420 *U*	1,100 *U*
TERRREF1	Rmarsh	SD0001-EW	9/28/2004	0	100 *U*	180 *U*	220 *U*	1,100 *U*	280 *U*	260 *U*	660 *U*
TERRREF3	Rmarsh	SD0021-EW	10/4/2004	0	120 *U*	200 *U*	260 *U*	1,300 *U*	330 *U*	300 *U*	760 *U*

Table C-28. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Chrysene (µg/kg wet)	Dibenz[a,h]-anthracene (µg/kg wet)	Dibenzofuran (µg/kg wet)	Diethyl phthalate (µg/kg wet)	Dimethyl phthalate (µg/kg wet)	Di-*n*-butyl phthalate (µg/kg wet)	Di-*n*-octyl phthalate (µg/kg wet)
13	marsh	SD0019-EW	10/4/2004	0	8.5 *J*	0.76 *J*	1.3 *J*	300 *U*	170 *U*	900 *U*	420 *U*
TERRREF1	Rmarsh	SD0001-EW	9/28/2004	0	9.6 *J*	1.1 *J*	0.66 *J*	190 *U*	110 *U*	570 *U*	260 *U*
TERRREF3	Rmarsh	SD0021-EW	10/4/2004	0	6.0 *J*	1.1 *J*	0.92 *J*	220 *U*	120 *U*	660 *U*	300 *U*

Station	Zone	Sample Number	Date	Field Replicate	Fluoranthene (µg/kg wet)	Fluorene (µg/kg wet)	Hexachloro-benzene (µg/kg wet)	Hexachloro-butadiene (µg/kg wet)	Hexachloro-cyclo-pentadiene (µg/kg wet)	Hexachloro-ethane (µg/kg wet)	Indeno[1,2,3-cd]pyrene (µg/kg wet)
13	marsh	SD0019-EW	10/4/2004	0	8.1 *J*	1.5 *J*	190 *U*	280 *U*	160,000 *U*	280 *U*	3.5 *J*
TERRREF1	Rmarsh	SD0001-EW	9/28/2004	0	10	1.2 *J*	120 *U*	170 *U*	100,000 *U*	170 *U*	4.5 *J*
TERRREF3	Rmarsh	SD0021-EW	10/4/2004	0	8.0 *J*	1.1 *J*	140 *U*	200 *U*	120,000 *U*	200 *U*	4.7 *J*

Table C-28. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Isophorone (µg/kg wet)	Naphthalene (µg/kg wet)	Nitrobenzene (µg/kg wet)	*N*-nitroso-di-*n*-propylamine (µg/kg wet)	*N*-nitroso-diphenylamine (µg/kg wet)
13	marsh	SD0019-EW	10/4/2004	0	190 *U*	4.2 *J*	320 *U*	270 *U*	310 *U*
TERRREF1	Rmarsh	SD0001-EW	9/28/2004	0	120 *U*	2.7 *J*	200 *U*	170 *U*	190 *U*
TERRREF3	Rmarsh	SD0021-EW	10/4/2004	0	140 *U*	2.8 *J*	230 *U*	190 *U*	220 *U*

Station	Zone	Sample Number	Date	Field Replicate	Pentachloro-phenol (µg/kg wet)	Phenanthrene (µg/kg wet)	Phenol (µg/kg wet)	Pyrene (µg/kg wet)	Total PAHs (µg/kg wet)
13	marsh	SD0019-EW	10/4/2004	0	990 *U*	5.8 *J*	550 *U*	7.0 *J*	60 *J*
TERRREF1	Rmarsh	SD0001-EW	9/28/2004	0	620 *U*	5.5 *J*	340 *U*	10	77 *J*
TERRREF3	Rmarsh	SD0021-EW	10/4/2004	0	720 *U*	4.8 *J*	390 *U*	7.8 *J*	66 *J*

Note: PAH - polycyclic aromatic hydrocarbon
Rmarsh - marsh reference zone
J - estimated
U - undetected at detection limit shown

Table C-29. Pesticide/PCB results for earthworm and blackworm bioaccumulation test samples

Station	Zone	Sample Number	Date	Field Replicate	4,4'-DDD (µg/kg wet)	4,4'-DDE (µg/kg wet)	4,4'-DDT (µg/kg wet)	Aldrin (µg/kg wet)	α-Chlordane (µg/kg wet)	a-Endosulfan (µg/kg wet)	α-Hexachloro-cyclohexane (µg/kg wet)
Earthworm											
11A	upland	SD0006-EW	9/29/2004	0	2.2 *U*	2.2 *U*	41	14 *J*	0.78 *U*	2.2 *U*	0.35 *U*
12	marsh	SD0016-EW	10/4/2004	0	2.7 *J*	2.7 *U*	13	2.7 *U*	0.95 *U*	2.7 *U*	2.7 *U*
13	marsh	SD0019-EW	10/4/2004	0	2.0 *J*	6.8	27	1.8 *J*	0.75 *U*	1.3 *U*	0.33 *U*
13A	upland	SD0002-EW	9/28/2004	0	0.25 *U*	1.2 *J*	5.1 *U*	1.9 *U*	0.69 *U*	0.41 *J*	1.0 *J*
14	marsh	SD0020-EW	10/4/2004	0	3.2 *J*	4.9	6.9	3.3 *J*	2.7 *U*	2.7 *U*	2.7 *U*
16	marsh	SD0007-EW	9/29/2004	0	2.4 *U*	2.4 *U*	32	3.0 *U*	2.4 *U*	2.4 *U*	0.37 *U*
18A	upland	SD0004-EW	9/28/2004	0	0.31 *U*	2.4 *U*	5.1 *U*	1.9 *J*	0.84 *U*	0.76 *J*	1.6 *J*
19	marsh	SD0005-EW	9/29/2004	0	0.33 *U*	1.5 *J*	9.1	1.7 *U*	0.91 *U*	0.33 *U*	2.0 *U*
22	upland	SD0003-EW	9/28/2004	0	2.0 *J*	2.1 *U*	180 *U*	2.1 *U*	13 *U*	41 *J*	1.3 *U*
TERRREF1	Rmarsh	SD0001-EW	9/28/2004	0	0.28 *U*	2.3	8.0 *U*	0.42 *U*	2.2 *J*	2.1 *U*	0.34 *U*
TERRREF2	Rmarsh	SD0015-EW	10/4/2004	0	1.5 *U*	1.5 *U*	7.8	1.5 *U*	1.9	1.3 *U*	1.7
TERRREF3	Rmarsh	SD0021-EW	10/4/2004	0	2.1 *U*	1.3 *J*	11	0.41 *U*	5.2	1.7 *U*	0.33 *U*
Blackworm											
11A	upland	SD0006-BW	9/29/2004	0	1.9 *J*	7.6 *U*	52 *U*	12 *J*	2.6	4.9 *U*	3.1 *J*
13	marsh	SD0019-BW	10/4/2004	0	3.5	17 *J*	20	0.68 *U*	1.3 *U*	1.2 *J*	3.4 *U*
13A	upland	SD0002-BW	9/28/2004	0	0.91 *J*	1.9 *U*	2.3 *U*	0.38 *U*	1.3 *U*	0.29 *U*	6.4 *J*
16	marsh	SD0007-BW	9/29/2004	0	3.7 *U*	11 *J*	23 *U*	3.7 *U*	2.3 *U*	0.48 *U*	5.5 *U*
17	marsh	SD0017-BW	10/4/2004	0	2.9 *U*	15	29 *J*	2.9 *U*	2.1 *J*	2.9 *U*	0.46 *U*
18A	upland	SD0004-BW	9/28/2004	0	0.38 *U*	3.0 *U*	1.7 *J*	3.0 *U*	1.1 *U*	0.38 *U*	3.0 *U*
19	marsh	SD0005-BW	9/29/2004	0	3.6	9.2	34 *U*	6.2 *J*	0.95 *U*	2.7 *U*	3.8 *J*
22	upland	SD0003-BW	9/28/2004	0	2.2 *J*	7.8 *U*	220 *U*	3.0 *U*	15 *U*	25 *U*	3.0 *U*
TERRREF1	Rmarsh	SD0001-BW	9/28/2004	0	0.78 *J*	3.2 *U*	7.9 *U*	0.56 *U*	2.6 *U*	2.3 *J*	7.1 *J*
TERRREF2	Rmarsh	SD0015-BW	10/4/2004	0	0.54 *J*	2.8 *U*	2.8 *U*	0.55 *U*	1.7 *U*	0.36 *U*	4.2 *U*
TERRREF3	Rmarsh	SD0021-BW	10/4/2004	0	1.8 *U*	8.3 *J*	8.2	2.1 *U*	0.67 *J*	1.8 *U*	1.4 *U*

Table C-29. (cont)

Station	Zone	Sample Number	Date	Field Replicate	β-Endosulfan (µg/kg wet)	β-Hexachloro-cyclohexane (µg/kg wet)	δ-Hexachloro-cyclohexane (µg/kg wet)	Dieldrin (µg/kg wet)	Endosulfan Sulfate (µg/kg wet)	Endrin (µg/kg wet)	Endrin Aldehyde (µg/kg wet)
Earthworm											
11A	upland	SD0006-EW	9/29/2004	0	2.4 *U*	0.46 *U*	2.2 *U*	2.2 *U*	2.2 *U*	4.7 *U*	4.4
12	marsh	SD0016-EW	10/4/2004	0	2.7 *U*	0.56 *U*	4.6 *U*	0.29 *U*	0.71 *U*	4.6	4.8 *U*
13	marsh	SD0019-EW	10/4/2004	0	0.73 *U*	2.1 *U*	0.98 *J*	1.6 *J*	2.1 *U*	2.1 *U*	2.1 *U*
13A	upland	SD0002-EW	9/28/2004	0	0.67 *U*	2.3 *J*	0.65 *U*	0.21 *U*	0.52 *U*	0.19 *U*	1.9 *U*
14	marsh	SD0020-EW	10/4/2004	0	0.92 *U*	0.56 *U*	2.3 *J*	2.7 *U*	0.71 *U*	2.7 *U*	2.7 *U*
16	marsh	SD0007-EW	9/29/2004	0	4.1 *U*	2.4 *U*	2.9	2.4 *U*	0.63 *U*	8.4 *J*	2.4 *U*
18A	upland	SD0004-EW	9/28/2004	0	1.6 *J*	2.4 *U*	2.4 *U*	0.26 *U*	2.4 *U*	2.4 *U*	0.40 *U*
19	marsh	SD0005-EW	9/29/2004	0	0.88 *U*	2.6 *U*	1.6 *U*	0.28 *U*	0.68 *U*	2.6 *U*	2.6 *U*
22	upland	SD0003-EW	9/28/2004	0	2.1 *U*	3.7 *U*	4.6 *U*	2.1 *U*	2.1 *U*	2.7 *U*	6.9 *J*
TERRREF1	Rmarsh	SD0001-EW	9/28/2004	0	0.73 *U*	1.8 *U*	0.71 *U*	0.90 *J*	0.57 *U*	2.1 *U*	0.36 *U*
TERRREF2	Rmarsh	SD0015-EW	10/4/2004	0	0.52 *U*	2.6 *J*	0.88 *J*	0.68 *J*	0.40 *U*	1.5 *U*	1.8 *U*
TERRREF3	Rmarsh	SD0021-EW	10/4/2004	0	0.72 *U*	2.1 *U*	0.94 *J*	0.86 *J*	0.56 *U*	2.1 *U*	2.5 *U*
Blackworm											
11A	upland	SD0006-BW	9/29/2004	0	2.3 *U*	1.2 *U*	2.3 *U*	2.3 *U*	0.62 *U*	3.5 *J*	0.50 *U*
13	marsh	SD0019-BW	10/4/2004	0	1.2 *U*	3.4 *U*	1.2 *U*	3.4 *U*	0.92 *U*	3.4 *U*	0.58 *U*
13A	upland	SD0002-BW	9/28/2004	0	0.67 *U*	2.3 *U*	1.9 *J*	1.6 *J*	0.52 *U*	0.68 *U*	0.48 *J*
16	marsh	SD0007-BW	9/29/2004	0	5.5 *U*	0.76 *U*	1.3 *U*	3.7 *U*	0.98 *U*	4.5 *U*	3.7 *U*
17	marsh	SD0017-BW	10/4/2004	0	12 *J*	0.60 *U*	0.97 *U*	2.9 *U*	0.77 *U*	4.5 *U*	2.9 *U*
18A	upland	SD0004-BW	9/28/2004	0	1.1 *U*	3.7 *U*	1.0 *U*	0.33 *U*	0.79 *U*	2.4 *U*	0.50 *U*
19	marsh	SD0005-BW	9/29/2004	0	2.7 *U*	2.7 *U*	2.6 *J*	2.7 *U*	0.71 *U*	2.2 *U*	2.7 *U*
22	upland	SD0003-BW	9/28/2004	0	3.2 *U*	0.63 *U*	1.1 *U*	3.0 *U*	0.81 *U*	3.0 *U*	0.51 *U*
TERRREF1	Rmarsh	SD0001-BW	9/28/2004	0	0.88 *U*	0.53 *U*	1.3 *U*	0.28 *U*	0.68 *U*	1.4 *U*	0.43 *U*
TERRREF2	Rmarsh	SD0015-BW	10/4/2004	0	0.96 *U*	1.4 *U*	0.93 *U*	1.5 *J*	2.8 *U*	1.4 *U*	0.47 *U*
TERRREF3	Rmarsh	SD0021-BW	10/4/2004	0	0.61 *U*	3.6 *U*	3.2 *U*	0.19 *U*	0.99 *J*	0.64 *U*	1.8 *U*

Table C-29. (cont)

Station	Zone	Sample Number	Date	Field Replicate	Endrin Ketone (µg/kg wet)	γ-Chlordane (µg/kg wet)	γ-Hexachloro-cyclohexane (µg/kg wet)	Heptachlor (µg/kg wet)	Heptachlor Epoxide (µg/kg wet)	Methoxychlor (µg/kg wet)	Toxaphene (µg/kg wet)
Earthworm											
11A	upland	SD0006-EW	9/29/2004	0	3.4 *U*	32	2.2 *U*	0.98 *U*	5.3 *U*	2.6 *U*	540 *U*
12	marsh	SD0016-EW	10/4/2004	0	2.7 *U*	21	2.7 *U*	1.2 *U*	2.7 *U*	2.7 *U*	320 *U*
13	marsh	SD0019-EW	10/4/2004	0	0.81 *U*	1.7 *U*	2.1 *U*	0.93 *U*	2.1 *U*	2.7 *U*	110 *U*
13A	upland	SD0002-EW	9/28/2004	0	2.1 *J*	2.9	1.3 *U*	0.86 *U*	1.9 *U*	1.5 *U*	95 *U*
14	marsh	SD0020-EW	10/4/2004	0	0.77 *U*	4.1	0.74 *U*	1.2 *U*	2.7 *U*	5.9 *J*	160 *U*
16	marsh	SD0007-EW	9/29/2004	0	7.3 *U*	48	2.4 *U*	1.1 *U*	2.4 *U*	2.4 *U*	1,100 *U*
18A	upland	SD0004-EW	9/28/2004	0	0.68 *U*	2.7 *U*	0.66 *U*	1.1 *U*	2.5 *U*	7.4 *J*	110 *U*
19	marsh	SD0005-EW	9/29/2004	0	0.73 *U*	5.3	2.6 *U*	1.2 *U*	2.6 *U*	4.8	150 *U*
22	upland	SD0003-EW	9/28/2004	0	2.1 *U*	180	11 *J*	2.1 *U*	98 *J*	2.1 *U*	640 *U*
TERRREF1	Rmarsh	SD0001-EW	9/28/2004	0	0.61 *U*	3.2	3.3 *J*	0.94 *U*	1.8 *J*	2.6 *U*	92 *U*
TERRREF2	Rmarsh	SD0015-EW	10/4/2004	0	1.8 *U*	6.1	1.5 *U*	0.66 *U*	1.5 *U*	1.5 *U*	220 *U*
TERRREF3	Rmarsh	SD0021-EW	10/4/2004	0	0.60 *U*	11	0.58 *U*	0.93 *U*	2.1 *U*	2.6 *U*	220 *U*
Blackworm											
11A	upland	SD0006-BW	9/29/2004	0	0.66 *U*	37	0.64 *U*	1.1 *U*	4.7 *U*	0.62 *U*	230 *U*
13	marsh	SD0019-BW	10/4/2004	0	1.3 *U*	3.4 *U*	0.95 *U*	1.6 *U*	3.4 *U*	2.2 *U*	170 *U*
13A	upland	SD0002-BW	9/28/2004	0	4.3	0.27 *U*	0.53 *U*	0.86 *U*	2.0 *U*	1.0 *U*	95 *U*
16	marsh	SD0007-BW	9/29/2004	0	3.7 *U*	28	1.5 *U*	1.7 *U*	32	0.98 *U*	370 *U*
17	marsh	SD0017-BW	10/4/2004	0	0.83 *U*	29 *J*	0.95 *U*	1.3 *U*	16	2.9 *U*	210 *U*
18A	upland	SD0004-BW	9/28/2004	0	1.1 *U*	3.0 *U*	3.2 *U*	1.4 *U*	3.0 *U*	0.79 *U*	200 *U*
19	marsh	SD0005-BW	9/29/2004	0	1.3 *U*	16 *J*	0.75 *U*	1.2 *U*	4.2 *U*	8.3 *J*	210 *U*
22	upland	SD0003-BW	9/28/2004	0	5.7 *U*	210 *J*	3.0 *U*	1.4 *U*	5.8 *U*	3.0 *U*	310 *U*
TERRREF1	Rmarsh	SD0001-BW	9/28/2004	0	0.73 *U*	2.6 *U*	0.71 *U*	1.2 *U*	3.0 *U*	0.68 *U*	130 *U*
TERRREF2	Rmarsh	SD0015-BW	10/4/2004	0	0.80 *U*	2.8 *U*	2.8 *U*	1.3 *U*	2.8 *U*	2.4 *U*	100 *U*
TERRREF3	Rmarsh	SD0021-BW	10/4/2004	0	1.8 *U*	2.7 *U*	1.8 *U*	2.5 *U*	1.9 *J*	6.9 *U*	110 *U*

Table C-29. (cont)

Station	Zone	Sample Number	Date	Field Replicate	Aroclor® 1016 (µg/kg wet)	Aroclor® 1221 (µg/kg wet)	Aroclor® 1232 (µg/kg wet)	Aroclor® 1242 (µg/kg wet)	Aroclor® 1248 (µg/kg wet)	Aroclor® 1254 (µg/kg wet)	Aroclor® 1260 (µg/kg wet)	PCBs (µg/kg wet)
Earthworm												
11A	upland	SD0006-EW	9/29/2004	0	4.4 *U*	6.7 *U*	4.4 *U*	7.6 *U*	450	790	560	1,800
12	marsh	SD0016-EW	10/4/2004	0	5.3 *U*	8.2 *U*	5.3 *U*	9.2 *U*	890	740	280	1,900
13	marsh	SD0019-EW	10/4/2004	0	4.2 *U*	6.4 *U*	4.2 *U*	7.3 *U*	30 *J*	140 *J*	170	340 *J*
13A	upland	SD0002-EW	9/28/2004	0	3.8 *U*	5.9 *U*	3.8 *U*	6.7 *U*	48 *J*	66	74	190 *J*
14	marsh	SD0020-EW	10/4/2004	0	5.3 *U*	8.2 *U*	5.3 *U*	9.2 *U*	100	160	110	370
16	marsh	SD0007-EW	9/29/2004	0	4.7 *U*	7.2 *U*	4.7 *U*	8.1 *U*	1,100	1,300	790	3,200
18A	upland	SD0004-EW	9/28/2004	0	4.7 *U*	7.3 *U*	4.7 *U*	8.2 *U*	55	92	88	240
19	marsh	SD0005-EW	9/29/2004	0	5.1 *U*	7.8 *U*	5.1 *U*	8.8 *U*	110	150	89	350
22	upland	SD0003-EW	9/28/2004	0	41 *U*	63 *U*	41 *U*	71 *U*	5,100	4,200	96 *U*	9,300
TERRREF1	Rmarsh	SD0001-EW	9/28/2004	0	4.2 *U*	6.5 *U*	4.2 *U*	7.3 *U*	19 *J*	63	98	180 *J*
TERRREF2	Rmarsh	SD0015-EW	10/4/2004	0	3.0 *U*	4.6 *U*	3.0 *U*	5.2 *U*	100	170	140	410
TERRREF3	Rmarsh	SD0021-EW	10/4/2004	0	4.1 *U*	6.4 *U*	4.1 *U*	7.2 *U*	190	190	170	550
Blackworm												
11A	upland	SD0006-BW	9/29/2004	0	4.6 *U*	7.1 *U*	4.6 *U*	8.0 *U*	440	1,100	620 *J*	2,200 *J*
13	marsh	SD0019-BW	10/4/2004	0	6.8 *U*	11 *U*	6.8 *U*	12 *U*	32 *J*	140 *J*	110	280 *J*
13A	upland	SD0002-BW	9/28/2004	0	3.8 *U*	5.9 *U*	3.8 *U*	6.7 *U*	3.3 *J*	24 *J*	37 *J*	64 *J*
16	marsh	SD0007-BW	9/29/2004	0	7.3 *U*	12 *U*	7.3 *U*	13 *U*	710	870	490	2,100
17	marsh	SD0017-BW	10/4/2004	0	5.7 *U*	8.9 *U*	5.7 *U*	10 *U*	420	510	350	1,300
18A	upland	SD0004-BW	9/28/2004	0	5.9 *U*	9.1 *U*	5.9 *U*	11 *U*	19 *J*	34 *J*	45	98 *J*
19	marsh	SD0005-BW	9/29/2004	0	5.3 *U*	8.2 *U*	5.3 *U*	9.2 *U*	240	520	370	1,100
22	upland	SD0003-BW	9/28/2004	0	60 *U*	93 *U*	60 *U*	110 *U*	5,600	5,400	150 *U*	11,000
TERRREF1	Rmarsh	SD0001-BW	9/28/2004	0	5.1 *U*	7.8 *U*	5.1 *U*	8.8 *U*	20 *J*	66	80	170 *J*
TERRREF2	Rmarsh	SD0015-BW	10/4/2004	0	5.5 *U*	8.5 *U*	5.5 *U*	9.6 *U*	14 *J*	23 *U*	68	82 *J*
TERRREF3	Rmarsh	SD0021-BW	10/4/2004	0	3.5 *U*	5.4 *U*	3.5 *U*	6.1 *U*	58 *J*	98	100	260 *J*

Note: PCB - polychlorinated biphenyl
Rmarsh - marsh reference zone
J - estimated
U - undetected at detection limit shown

Table C-30. Inorganic chemical results for earthworm and blackworm bioaccumulation test samples

Station	Zone	Sample Number	Date	Field Replicate	Aluminum (mg/kg wet)	Antimony (mg/kg wet)	Arsenic (mg/kg wet)	Barium (mg/kg wet)	Beryllium (mg/kg wet)	Cadmium (mg/kg wet)	Chromium (mg/kg wet)
Earthworm											
11A	upland	SD0006-EW	9/29/2004	0	401	0.031	5.80	1.0	0.0097	0.54	2.8
12	marsh	SD0016-EW	10/4/2004	0	890	0.074	47.5	3.6	0.037	0.33	2.7
13	marsh	SD0019-EW	10/4/2004	0	428	0.082	7.5	1.5	0.012	0.19	0.96
13A	upland	SD0002-EW	9/28/2004	0	320	0.016	2.5	0.81	0.0090	0.55	0.89
14	marsh	SD0020-EW	10/4/2004	0	841	0.064	5.4	2.1	0.048	0.31	5.7
16	marsh	SD0007-EW	9/29/2004	0	285	0.038	54.3	1.5	0.0090	0.25	0.90
17	marsh	SD0017-EW	10/4/2004	0	442	0.23	328	2.6	0.013	0.33	2.5
18A	upland	SD0004-EW	9/28/2004	0	682	0.020	3.8	1.6	0.019	0.27	2.5
19	marsh	SD0005-EW	9/29/2004	0	734	0.034	2.9	1.7	0.024	0.35	3.7
22	upland	SD0003-EW	9/28/2004	0	724	0.025	4.3	2.4	0.016	0.63	5.1
TERRREF1	Rmarsh	SD0001-EW	9/28/2004	0	560	0.029	2.8	2.1	0.032	1.1	1.7
TERRREF2	Rmarsh	SD0015-EW	10/4/2004	0	270	0.019	5.1	0.79	0.0071	0.30	0.72
TERRREF3	Rmarsh	SD0021-EW	10/4/2004	0	646	0.034	3.6	2.1	0.026	0.85	2.0
Blackworm											
11A	upland	SD0006-BW	9/29/2004	0	311	0.21	1.6	7.5	0.0095	0.57	3.1
13	marsh	SD0019-BW	10/4/2004	0	155	0.044	4.0	6.1	0.0048	0.089	0.32
13A	upland	SD0002-BW	9/28/2004	0	614	0.040	5.6	6.8	0.020	0.16	0.97
14	marsh	SD0020-BW	10/4/2004	0	390	0.022	3.6	12.3	0.025	0.54	3.0
16	marsh	SD0007-BW	9/29/2004	0	289	0.034	57.2	7.0	0.0091	0.14	1.1
17	marsh	SD0017-BW	10/4/2004	0	33.6	0.028	57.6	3.3	0.0030 *U*	0.058	0.15
18A	upland	SD0004-BW	9/28/2004	0	707	0.026	1.1	7.3	0.021	0.076	2.6
19	marsh	SD0005-BW	9/29/2004	0	394	0.022	1.0	7.0	0.012	0.37	2.4
22	upland	SD0003-BW	9/28/2004	0	366	0.016	1.5	7.7	0.012	0.39	4.2
TERRREF1	Rmarsh	SD0001-BW	9/28/2004	0	442	0.038	2.0	10.4	0.037	1.0	1.2
TERRREF2	Rmarsh	SD0015-BW	10/4/2004	0	300	0.032	5.7	6.2	0.0079	0.069	0.56
TERRREF3	Rmarsh	SD0021-BW	10/4/2004	0	542	0.035	2.6	7.1	0.025	0.52	1.7

Table C-30. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Cobalt (mg/kg wet)	Copper (mg/kg wet)	Iron (mg/kg wet)	Lead (mg/kg wet)	Manganese (mg/kg wet)	Mercury (mg/kg wet)	Nickel (mg/kg wet)
Earthworm											
11A	upland	SD0006-EW	9/29/2004	0	0.78	11.0	479	3.8	3.5	0.52	1.2
12	marsh	SD0016-EW	10/4/2004	0	1.5	14.9	1,010	3.9	6.8	0.45	1.6
13	marsh	SD0019-EW	10/4/2004	0	0.64	10.9	576	2.5	3.7	0.080	0.55
13A	upland	SD0002-EW	9/28/2004	0	0.85	11.4	249	6.8	2.5	0.070	1.7
14	marsh	SD0020-EW	10/4/2004	0	1.7	43.6	1,450	3.5	21.6	0.13	2.1
16	marsh	SD0007-EW	9/29/2004	0	0.81	4.1	314	3.1	3.1	1.1	0.53
17	marsh	SD0017-EW	10/4/2004	0	1.4	15.7	2,260	5.0	17.5	1.9	2.9
18A	upland	SD0004-EW	9/28/2004	0	1.1	3.1	657	27.0	3.3	0.15	0.53
19	marsh	SD0005-EW	9/29/2004	0	1.3	38.1	411	4.4	6.6	0.80	1.3
22	upland	SD0003-EW	9/28/2004	0	0.98	12.1	760	3.7	4.7	0.54	1.1
TERRREF1	Rmarsh	SD0001-EW	9/28/2004	0	0.87	7.5	520	4.6	13.1	0.092	0.97
TERRREF2	Rmarsh	SD0015-EW	10/4/2004	0	0.68	2.7	210	8.8	1.7	0.10	0.29
TERRREF3	Rmarsh	SD0021-EW	10/4/2004	0	0.68	9.1	630	4.0	6.6	0.11	0.96
Blackworm											
11A	upland	SD0006-BW	9/29/2004	0	0.22	49.0	545	4.2 *J*	4.4 *J*	0.33	1.4 *J*
13	marsh	SD0019-BW	10/4/2004	0	0.14	22.1	312	0.94 *J*	2.0 *J*	1.8	0.29 *J*
13A	upland	SD0002-BW	9/28/2004	0	0.23	4.7	714	6.7 *J*	4.2 *J*	0.062	0.60 *J*
14	marsh	SD0020-BW	10/4/2004	0	0.70	31.5	791	2.4 *J*	5.5 *J*	0.10	1.6 *J*
16	marsh	SD0007-BW	9/29/2004	0	0.21	8.2	458	2.3 *J*	3.1 *J*	39.2	0.51 *J*
17	marsh	SD0017-BW	10/4/2004	0	0.12	2.3	236	0.60 *J*	1.5 *J*	1.1	0.37 *J*
18A	upland	SD0004-BW	9/28/2004	0	0.25	4.7	754	15.8 *J*	3.0 *J*	0.073	0.60 *J*
19	marsh	SD0005-BW	9/29/2004	0	0.21	48.1	357	3.9 *J*	1.8 *J*	3.2	0.83 *J*
22	upland	SD0003-BW	9/28/2004	0	0.28	36.7	569	3.2 *J*	3.9 *J*	9.7	1.1 *J*
TERRREF1	Rmarsh	SD0001-BW	9/28/2004	0	0.73	40.2	585	5.1 *J*	11.8 *J*	1.3	0.91 *J*
TERRREF2	Rmarsh	SD0015-BW	10/4/2004	0	0.10	4.1	323	7.9 *J*	1.5 *J*	0.17	0.26 *J*
TERRREF3	Rmarsh	SD0021-BW	10/4/2004	0	0.41	28.7	651	3.3 *J*	6.5 *J*	0.97	1.0 *J*

Table C-30. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Selenium (mg/kg wet)	Silver (mg/kg wet)	Thallium (mg/kg wet)	Vanadium (mg/kg wet)	Zinc (mg/kg wet)
Earthworm									
11A	upland	SD0006-EW	9/29/2004	0	0.29	1.1	0.013	0.54	14.3
12	marsh	SD0016-EW	10/4/2004	0	0.24	0.38	0.044	1.8	29.7
13	marsh	SD0019-EW	10/4/2004	0	0.16	0.15	0.011	1.4	15.1
13A	upland	SD0002-EW	9/28/2004	0	0.18	0.12	0.0075	0.53	18.2
14	marsh	SD0020-EW	10/4/2004	0	0.32	0.97	0.017	3.1	26.1
16	marsh	SD0007-EW	9/29/2004	0	0.19	0.17	0.010	0.63	17.1
17	marsh	SD0017-EW	10/4/2004	0	0.24	0.43	0.016	1.5	31.6
18A	upland	SD0004-EW	9/28/2004	0	0.18	0.36	0.022	1.0	14.9
19	marsh	SD0005-EW	9/29/2004	0	0.36	1.1	0.027	0.79	20.5
22	upland	SD0003-EW	9/28/2004	0	0.32	0.16	0.019	0.88	14.6
TERRREF1	Rmarsh	SD0001-EW	9/28/2004	0	0.15	0.18	0.015	1.4	16.5
TERRREF2	Rmarsh	SD0015-EW	10/4/2004	0	0.22	0.11	0.0099	0.58	13.1
TERRREF3	Rmarsh	SD0021-EW	10/4/2004	0	0.22	0.15	0.022	1.4	19.1
Blackworm									
11A	upland	SD0006-BW	9/29/2004	0	0.21	3.2	0.033	0.57	40.0
13	marsh	SD0019-BW	10/4/2004	0	0.19	0.65	0.0064	0.54	37.9
13A	upland	SD0002-BW	9/28/2004	0	0.12	0.20	0.0052	1.6	29.0
14	marsh	SD0020-BW	10/4/2004	0	0.22	0.21	0.0036	1.4	37.8
16	marsh	SD0007-BW	9/29/2004	0	0.16	0.24	0.0084	0.83	34.3
17	marsh	SD0017-BW	10/4/2004	0	0.12	0.035	0.0046	0.22	25.6
18A	upland	SD0004-BW	9/28/2004	0	0.15	0.77	0.0098	1.1	27.3
19	marsh	SD0005-BW	9/29/2004	0	0.17	0.77	0.016	0.50	31.7
22	upland	SD0003-BW	9/28/2004	0	0.25	0.51	0.024	0.64	32.7
TERRREF1	Rmarsh	SD0001-BW	9/28/2004	0	0.13	0.44	0.021	1.2	46.5
TERRREF2	Rmarsh	SD0015-BW	10/4/2004	0	0.11	0.066	0.0041	0.75	27.5
TERRREF3	Rmarsh	SD0021-BW	10/4/2004	0	0.16	0.16	0.029	1.4	39.2

Table C-30. (cont.)

Station	Zone	Sample Number	Date	Field Replicate	Calcium (mg/kg wet)	Magnesium (mg/kg wet)	Potassium (mg/kg wet)	Sodium (mg/kg wet)
Earthworm								
11A	upland	SD0006-EW	9/29/2004	0	556	112	1,380	690
12	marsh	SD0016-EW	10/4/2004	0	774	299	1,920	1,750
13	marsh	SD0019-EW	10/4/2004	0	679	165	1,580	1,040
13A	upland	SD0002-EW	9/28/2004	0	474	123	1,300	788
14	marsh	SD0020-EW	10/4/2004	0	682	324	2,050	1,870
16	marsh	SD0007-EW	9/29/2004	0	515	143	1,390	832
17	marsh	SD0017-EW	10/4/2004	0	1,080	148	1,500	944
18A	upland	SD0004-EW	9/28/2004	0	545	125	1,430	846
19	marsh	SD0005-EW	9/29/2004	0	720	153	1,440	755
22	upland	SD0003-EW	9/28/2004	0	661	124	1,370	642
TERRREF1	Rmarsh	SD0001-EW	9/28/2004	0	541	154	1,250	763
TERRREF2	Rmarsh	SD0015-EW	10/4/2004	0	516	104	1,220	731
TERRREF3	Rmarsh	SD0021-EW	10/4/2004	0	561	195	1,390	753
Blackworm								
11A	upland	SD0006-BW	9/29/2004	0	459	133	1,240	505
13	marsh	SD0019-BW	10/4/2004	0	178	127	1,320	620
13A	upland	SD0002-BW	9/28/2004	0	273	128	1,190	545
14	marsh	SD0020-BW	10/4/2004	0	211	140	1,250	622
16	marsh	SD0007-BW	9/29/2004	0	131	142	936	544
17	marsh	SD0017-BW	10/4/2004	0	96.0	64.9	775	501
18A	upland	SD0004-BW	9/28/2004	0	254	142	1,290	616
19	marsh	SD0005-BW	9/29/2004	0	171	125	1,380	606
22	upland	SD0003-BW	9/28/2004	0	194	132	1,310	557
TERRREF1	Rmarsh	SD0001-BW	9/28/2004	0	345	169	1,390	625
TERRREF2	Rmarsh	SD0015-BW	10/4/2004	0	202	127	1,300	657
TERRREF3	Rmarsh	SD0021-BW	10/4/2004	0	292	177	1,280	625

Note: Rmarsh - marsh reference zone
J - estimated
U - undetected at detection limit shown

Inorganic chemical results converted from dry-weight basis.

Table C-31. Conventional parameter results for earthworm and blackworm bioaccumulation test samples

Station	Zone	Sample Number	Date	Field Replicate	Lipid (% wet)	Total Solids (dry wt. as percent of wet wt. or volume) (% wet)
Earthworm						
11A	upland	SD0006-EW	9/29/2004	0	1.6	12.8
12	marsh	SD0016-EW	10/4/2004	0	2.0	16.8
13	marsh	SD0019-EW	10/4/2004	0	1.2	13.5
13A	upland	SD0002-EW	9/28/2004	0	1.3	11.9
14	marsh	SD0020-EW	10/4/2004	0	2.1	18.0
16	marsh	SD0007-EW	9/29/2004	0	1.6	12.2
17	marsh	SD0017-EW	10/4/2004	0		17.0
18A	upland	SD0004-EW	9/28/2004	0	1.5	14.2
19	marsh	SD0005-EW	9/29/2004	0	2.1	15.1
22	upland	SD0003-EW	9/28/2004	0	1.6	13.4
TERRREF1	Rmarsh	SD0001-EW	9/28/2004	0	1.2	11.9
TERRREF2	Rmarsh	SD0015-EW	10/4/2004	0	1.3	11.1
TERRREF3	Rmarsh	SD0021-EW	10/4/2004	0	1.2	12.1
Blackworm						
11A	upland	SD0006-BW	9/29/2004	0	1.1	11.7
13	marsh	SD0019-BW	10/4/2004	0	1.2	11.2
13A	upland	SD0002-BW	9/28/2004	0	0.95	11.3
14	marsh	SD0020-BW	10/4/2004	0		10.4
16	marsh	SD0007-BW	9/29/2004	0	0.99	9.0
17	marsh	SD0017-BW	10/4/2004	0	0.90	8.0
18A	upland	SD0004-BW	9/28/2004	0	1.1	11.8
19	marsh	SD0005-BW	9/29/2004	0	1.3	11.9
22	upland	SD0003-BW	9/28/2004	0	1.4	11.8
TERRREF1	Rmarsh	SD0001-BW	9/28/2004	0	1.2	13.0
TERRREF2	Rmarsh	SD0015-BW	10/4/2004	0	1.0	11.4
TERRREF3	Rmarsh	SD0021-BW	10/4/2004	0	0.65	11.0

Note: Rmarsh - marsh reference zone

Appendix D

Summary Statistics from 2004 Supplemental Field Investigation

Contents

Table D-1. 2004 volatile organic compound summary statistics for marsh sediment—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
1,1,1-Trichloroethane	µg/kg	dry	10	1	0.92	0.92	0.92	0.65	1.5	2.6
1,1,2,2-Tetrachloroethane	µg/kg	dry	10	0				0.84	1.8	3.4
1,1,2-Trichloroethane	µg/kg	dry	10	0				0.79	1.7	3.2
1,1-Dichloroethane	µg/kg	dry	10	0				0.89	2	3.6
1,1-Dichloroethene	µg/kg	dry	10	0				0.79	1.7	3.2
1,2,4-Trichlorobenzene	µg/kg	dry	10	2	1.9	10	18	0.88	1.9	3.5
1,2,4,5-Tetrachlorobenzene	µg/kg	dry	10	1	7.6	7.6	7.6	6.9	40	130
1,2-Dibromo-3-chloropropane	µg/kg	dry	10	0				0.97	2.1	3.9
1,2-Dibromoethane	µg/kg	dry	10	0				0.91	2	3.6
1,2-Dichlorobenzene	µg/kg	dry	10	0				0.75	1.6	3
1,2-Dichloroethane	µg/kg	dry	10	0				0.77	1.7	3.1
1,2-Dichloropropane	µg/kg	dry	10	0				0.83	1.8	3.3
1,3-Dichlorobenzene	µg/kg	dry	10	0				0.81	1.8	3.3
1,4-Dichlorobenzene	µg/kg	dry	10	0				0.94	2.1	3.8
2-Hexanone	µg/kg	dry	10	0				7	15	28
4-Methyl-2-pentanone	µg/kg	dry	10	0				6.3	14	25
Acetone	µg/kg	dry	10	0				12	30	81
Benzene	µg/kg	dry	10	0				0.91	2	3.6
Bromodichloromethane	µg/kg	dry	10	0				0.61	1.3	2.5
Bromomethane	µg/kg	dry	10	0				0.92	2	3.7
Carbon disulfide	µg/kg	dry	10	0				1.8	3.8	6.9
Carbon tetrachloride	µg/kg	dry	10	0				0.69	1.5	2.8
Trichlorofluoromethane	µg/kg	dry	10	0				0.84	1.8	3.4
Trichlorotrifluoroethane	µg/kg	dry	10	0				0.85	1.9	3.4
Chlorobenzene	µg/kg	dry	10	0				0.8	1.8	3.2
Chloroethane	µg/kg	dry	10	0				0.89	2	3.6
Chloroform	µg/kg	dry	10	1	18	18	18	0.65	1.5	2.6
Chloromethane	µg/kg	dry	10	0				1.2	2.5	4.5
cis -1,2-Dichloroethene	µg/kg	dry	10	0				0.95	2.1	3.8
cis -1,3-Dichloropropene	µg/kg	dry	10	0				0.87	1.9	3.5
Cyclohexane	µg/kg	dry	10	0				0.77	1.7	3.1
Dichlorodifluoromethane	µg/kg	dry	10	0				0.8	1.8	3.2
Methylene chloride	µg/kg	dry	10	0				3	4.8	6.8
Ethylbenzene	µg/kg	dry	10	1	18	18	18	0.65	1.4	2.6
Isopropylbenzene	µg/kg	dry	10	0				0.78	1.7	3.1
Methyl acetate	µg/kg	dry	10	0				0.84	1.8	3.4
Methyl-*tert* -butyl ether	µg/kg	dry	10	0				0.73	1.6	3
Methylcyclohexane	µg/kg	dry	10	0				0.81	1.8	3.3
Styrene	µg/kg	dry	10	1	9.5	9.5	9.5	0.84	2	3.4
Tetrachloroethene	µg/kg	dry	10	2	0.83	1	1.1	0.36	0.9	1.5

Table D-1. (cont.)

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Toluene	µg/kg	dry	10	0				0.96	2.1	3.9
trans -1,2-Dichloroethene	µg/kg	dry	10	0				0.84	1.8	3.4
trans -1,3-Dichloropropene	µg/kg	dry	10	0				0.69	1.5	2.8
Bromoform	µg/kg	dry	10	0				0.75	1.6	3
Trichloroethene	µg/kg	dry	10	3	0.88	2.3	4.1	0.32	0.9	1.3
Vinyl chloride	µg/kg	dry	10	0				0.71	1.6	2.9

Table D-2. 2004 semivolatile organic compound summary statistics for marsh sediment—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
2,4,5-Trichlorophenol	µg/kg	dry	10	1	5.7	5.7	5.7	4.2	25	75
2,4,6-Trichlorophenol	µg/kg	dry	10	0				2.3	14	45
2,4-Dichlorophenol	µg/kg	dry	10	0				2.3	14	45
2,4-Dimethylphenol	µg/kg	dry	10	1	8	8	8	7.7	50	140
2,4-Dinitrophenol	µg/kg	dry	10	0				45	280	900
2,4-Dinitrotoluene	µg/kg	dry	10	0				3.5	22	70
2,6-Dinitrotoluene	µg/kg	dry	10	0				3.5	22	70
2-Chloronaphthalene	µg/kg	dry	10	0				4.5	28	90
2-Chlorophenol	µg/kg	dry	10	0				2.1	13	43
2-Methyl-4,6-dinitrophenol	µg/kg	dry	10	0				2.1	13	43
2-Methylnaphthalene	µg/kg	dry	10	7	8.1	18	43	4.4	13	29
2-Methylphenol	µg/kg	dry	10	1	29	29	29	4.8	28	85
2-Nitroaniline	µg/kg	dry	10	0				3.4	21	68
2-Nitrophenol	µg/kg	dry	10	0				3.3	20	65
3,3'-Dichlorobenzidine	µg/kg	dry	10	0				4.6	28	92
3-Nitroaniline	µg/kg	dry	10	0				3.3	20	65
4-Bromophenyl ether	µg/kg	dry	10	0				1.8	11	35
4-Chloro-3-methylphenol	µg/kg	dry	10	0				2.6	16	53
4-Chloroaniline	µg/kg	dry	10	0				2.6	16	53
4-Chlorophenyl-phenyl ether	µg/kg	dry	10	0				2.5	15	50
4-Methylphenol	µg/kg	dry	10	3	8.4	15	24	6	29	73
4-Nitroaniline	µg/kg	dry	10	0				4.2	26	85
4-Nitrophenol	µg/kg	dry	10	0				37	230	750
Acenaphthene	µg/kg	dry	10	2	2.3	3.2	4	1.3	9	25
Acenaphthylene	µg/kg	dry	10	8	5.6	12	36	34	35	35
Acetophenone	µg/kg	dry	10	3	22	46	94	25	120	300
Anthracene	µg/kg	dry	10	9	6.2	16	37	34	34	34
Atrazine	µg/kg	dry	10	0				2.8	17	55
Benz[a]anthracene	µg/kg	dry	10	9	19	50	120	34	34	34
Benzaldehyde	µg/kg	dry	10	3	21	110	230	11	80	220
Benzo[a]pyrene	µg/kg	dry	10	9	24	60	150	38	38	38
Benzo[b]fluoranthene	µg/kg	dry	10	9	44	100	190	60	60	60
Benzo[ghi]perylene	µg/kg	dry	10	9	25	60	140	55	55	55
Benzo[k]fluoranthene	µg/kg	dry	10	7	13	35	70	12	45	63
Biphenyl	µg/kg	dry	10	3	14	33	51	6	50	120
Bis[2-chloroethoxy]methane	µg/kg	dry	10	0				1.7	10	33
Bis[2-chloroethyl]ether	µg/kg	dry	10	5	13	18	29	3	29	60
Bis[2-chloroisopropyl]ether	µg/kg	dry	10	0				1.5	9	30
Bis[2-Ethylhexyl]phthalate	µg/kg	dry	10	7	70	1,000	6,100	21	70	150
Butylbenzyl phthalate	µg/kg	dry	10	5	4.2	11	16	5.5	19	38

Table D-2. (cont.)

Analyte	Concentration Units	Measurement Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Caprolactam	µg/kg	dry	10	0				15	90	300
Carbazole	µg/kg	dry	10	7	3.5	8	16	6	23	33
Chrysene	µg/kg	dry	10	9	22	60	150	34	34	34
Dibenz[a,h]anthracene	µg/kg	dry	10	6	5.8	17	26	8	32	55
Dibenzofuran	µg/kg	dry	10	4	2.3	3.9	5.8	4.7	15	33
Diethyl phthalate	µg/kg	dry	10	1	120	120	120	4.4	20	83
Dimethyl phthalate	µg/kg	dry	10	1	6.2	6.2	6.2	2.6	15	45
Di-*n*-butyl phthalate	µg/kg	dry	10	6	3.8	500	2,800	9.4	25	62
Di-n-octyl phthalate	µg/kg	dry	10	1	10	10	10	1.5	10	30
Fluoranthene	µg/kg	dry	10	9	32	90	220	53	53	53
Fluorene	µg/kg	dry	10	1	6.4	6.4	6.4	2.1	14	43
Hexachlorobenzene	µg/kg	dry	10	1	2.8	2.8	2.8	3	17	53
Hexachlorobutadiene	µg/kg	dry	10	0				1.8	11	35
Hexachlorocyclopentadiene	µg/kg	dry	10	0				19	110	380
Hexachloroethane	µg/kg	dry	10	0				2.8	17	55
Indeno[1,2,3-cd]pyrene	µg/kg	dry	10	9	25	60	110	45	45	45
Isophorone	µg/kg	dry	10	3	2.3	31	86	3.3	11	38
Naphthalene	µg/kg	dry	10	7	6.2	25	45	4.7	14	31
Nitrobenzene	µg/kg	dry	10	5	4.3	18	34	7.3	25	50
N-nitroso-di-*n*-propylamine	µg/kg	dry	10	0				4	25	80
N-nitrosodiphenylamine	µg/kg	dry	10	2	4.6	60	120	3.1	14	53
Pentachlorophenol	µg/kg	dry	10	2	15	15	15	18	80	220
Phenanthrene	µg/kg	dry	10	9	19	39	94	31	31	31
Phenol	µg/kg	dry	10	8	23	140	580	9.2	27	45
Pyrene	µg/kg	dry	10	10	33	80	200			
Total PAHs	µg/kg	dry	10	10	300	700	1,400			

Note: PAH - polycyclic aromatic hydrocarbon

Table D-3. 2004 pesticide/PCB summary statistics for marsh sediment—Site

Analyte	Concentration Units	Measurement Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
4,4'-DDD	µg/kg	dry	10	5	0.51	6	13	1.3	2.5	6.3
4,4'-DDE	µg/kg	dry	10	3	0.8	8	14	0.6	4.6	8.9
4,4'-DDT	µg/kg	dry	10	10	2.2	90	440			
Aldrin	µg/kg	dry	10	4	1.1	10	27	0.29	3	13
α-Chlordane	µg/kg	dry	10	8	0.3	3.3	8.3	0.77	14	27
α-Endosulfan	µg/kg	dry	10	4	2.1	7	13	0.13	7	32
α-Hexachlorocyclohexane	µg/kg	dry	10	4	0.36	0.9	1.4	0.095	0.7	1.2
β-Endosulfan	µg/kg	dry	10	1	2.3	2.3	2.3	0.07	6	13
β-Hexachlorocyclohexane	µg/kg	dry	10	3	2.6	8	13	0.91	3.3	6.5
δ-Hexachlorocyclohexane	µg/kg	dry	10	1	1.5	1.5	1.5	0.16	3	17
Dieldrin	µg/kg	dry	10	2	3	11	19	0.57	26	96
Endosulfan sulfate	µg/kg	dry	10	0				0.24	9	65
Endrin	µg/kg	dry	10	2	1.8	7	13	0.28	2.4	6.3
Endrin aldehyde	µg/kg	dry	10	8	0.54	8	30	0.19	11	22
Endrin ketone	µg/kg	dry	10	5	3.2	30	100	1.8	10	22
γ-Chlordane	µg/kg	dry	10	7	13	160	790	0.59	1.8	4.1
γ-Hexachlorocyclohexane	µg/kg	dry	10	5	0.78	4	14	0.12	0.5	1.4
Heptachlor	µg/kg	dry	10	1	8.3	8.3	8.3	0.12	1.5	6.3
Heptachlor epoxide	µg/kg	dry	10	4	1.2	19	41	0.16	9	30
Methoxychlor	µg/kg	dry	10	4	1.5	20	32	0.57	7	28
Toxaphene	µg/kg	dry	10	0				14	800	3,500
Aroclor® 1016	µg/kg	dry	10	0				2.1	27	78
Aroclor® 1221	µg/kg	dry	10	0				2.1	27	78
Aroclor® 1232	µg/kg	dry	10	0				2.1	27	78
Aroclor® 1242	µg/kg	dry	10	0				2.1	27	78
Aroclor® 1248	µg/kg	dry	10	4	160	2,400	8,700	2.1	31	78
Aroclor® 1254	µg/kg	dry	10	10	15	1,600	7,200			
Aroclor® 1260	µg/kg	dry	10	10	21	1,000	4,400			
PCBs	µg/kg	dry	10	10	36	4,000	20,000			

Note: PCB - polychlorinated biphenyl

Table D-4. 2004 dioxin and furan summary statistics for marsh sediment—Site

Analyte	Concentration Units	Measurement Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
2,3,7,8-Tetrachlorodibenzo-*p*-dioxin	ng/kg	dry	4	3	0.67	1	1.7	0.069	0.069	0.069
1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin	ng/kg	dry	4	4	0.21	1.3	2.7			
1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin	ng/kg	dry	4	4	0.35	1.5	3.1			
1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin	ng/kg	dry	4	4	0.69	3.3	6.7			
1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin	ng/kg	dry	4	4	1.4	4.4	8.4			
1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin	ng/kg	dry	4	4	22	49	97			
Octachlorodibenzo-*p*-dioxin	ng/kg	dry	4	4	410	2,200	4,200			
2,3,7,8-Tetrachlorodibenzofuran	ng/kg	dry	4	4	1.4	4	7.9			
1,2,3,7,8-Pentachlorodibenzofuran	ng/kg	dry	4	4	1.5	5.2	9.3			
2,3,4,7,8-Pentachlorodibenzofuran	ng/kg	dry	4	4	2.7	5	11			
1,2,3,4,7,8-Hexachlorodibenzofuran	ng/kg	dry	4	4	4.1	19	37			
1,2,3,6,7,8-Hexachlorodibenzofuran	ng/kg	dry	4	4	1.2	7	13			
2,3,4,6,7,8-Hexachlorodibenzofuran	ng/kg	dry	4	4	1.2	6	11			
1,2,3,7,8,9-Hexachlorodibenzofuran	ng/kg	dry	4	1	2.5	2.5	2.5	0.17	0.34	0.67
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ng/kg	dry	4	4	12	60	100			
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ng/kg	dry	4	4	0.85	3.7	6.9			
Octachlorodibenzofuran	ng/kg	dry	4	4	16	50	100			
Total tetrachlorodibenzo-*p*-dioxins	ng/kg	dry	4	4	5.4	26	55			
Total pentachlorodibenzo-*p*-dioxins	ng/kg	dry	4	4	4.3	25	57			
Total hexachlorodibenzo-*p*-dioxins	ng/kg	dry	4	4	14	50	98			
Total heptachlorodibenzo-*p*-dioxins	ng/kg	dry	4	4	22	110	230			
Total tetrachlorodibenzofurans	ng/kg	dry	4	4	35	90	200			
Total pentachlorodibenzofurans	ng/kg	dry	4	4	27	54	91			
Total hexachlorodibenzofurans	ng/kg	dry	4	4	15	70	120			
Total heptachlorodibenzofurans	ng/kg	dry	4	4	21	80	160			

Table D-5. 2004 inorganic analyte summary statistics for marsh sediment—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Aluminum	mg/kg	dry	10	10	3,820	10,800	18,500			
Antimony	mg/kg	dry	10	1	11.8	11.8	11.8	0.46	1.8	3.14
Arsenic	mg/kg	dry	10	10	9.34	2,000	17,800			
Barium	mg/kg	dry	10	10	10	72	127			
Beryllium	mg/kg	dry	10	10	0.24	0.6	1.5			
Cadmium	mg/kg	dry	10	10	0.091	1.61	4.32			
Chromium	mg/kg	dry	10	10	13.9	158	311			
Cobalt	mg/kg	dry	10	10	1.6	9.4	29.6			
Copper	mg/kg	dry	10	10	15.8	480	1,240			
Iron	mg/kg	dry	10	10	10,000	42,000	102,000			
Lead	mg/kg	dry	10	10	37.2	214	337			
Manganese	mg/kg	dry	10	10	41.6	360	1,440			
Mercury	mg/kg	dry	10	10	0.073	13.1	68			
Nickel	mg/kg	dry	10	5	35	53.7	76.7	3.64	15.7	29.7
Selenium	mg/kg	dry	10	10	0.3	2.7	7.4			
Silver	mg/kg	dry	10	10	0.5	24	133			
Thallium	mg/kg	dry	10	0				0.043	0.17	0.26
Vanadium	mg/kg	dry	10	10	13	48.6	88.1			
Zinc	mg/kg	dry	10	10	42.7	204	477			
Cyanide	mg/kg	dry	10	10	0.12	0.7	2.1			
Calcium	mg/kg	dry	10	10	111	4,100	14,100			
Magnesium	mg/kg	dry	10	10	283	2,580	6,080			
Potassium	mg/kg	dry	10	9	496	1,420	2,640	259	259	259
Sodium	mg/kg	dry	10	10	22.5	2,100	11,900			

Table D-6. 2004 conventional parameter summary statistics for marsh sediment—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Acid-volatile sulfide	mg/kg	dry	10	2	3.7	340	680	1	1	1
Total organic carbon	%	dry	10	10	1.4	7	21			
Percent silt	%	dry	10	10	6.8	36	61			
Percent clay	%	dry	10	10	2.3	18	35			
Phi class -3.00+ to -2.00	%	dry	10	10	0	4	16			
Phi class -2.00+ to -1.00	%	dry	10	10	1.4	6	15			
Phi class -1.00+ to 0.00	%	dry	10	10	3.3	7	13			
Phi class 0.00+ to 1.00	%	dry	10	10	2.5	8	25			
Phi class 1.00+ to 2.00	%	dry	10	10	2.1	7	27			
Phi class 2.00+ to 3.00	%	dry	10	10	2.3	11	26			
Phi class 3.00+ to 4.00	%	dry	10	10	0.56	3	7.4			

Table D-7. 2004 volatile organic compound summary statistics for marsh sediment—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
1,1,1-Trichloroethane	µg/kg	dry	3	0				0.84	1	1.2
1,1,2,2-Tetrachloroethane	µg/kg	dry	3	0				1.1	1.3	1.5
1,1,2-Trichloroethane	µg/kg	dry	3	0				1.1	1.2	1.4
1,1-Dichloroethane	µg/kg	dry	3	0				1.2	1.4	1.6
1,1-Dichloroethene	µg/kg	dry	3	0				1.1	1.2	1.4
1,2,4-Trichlorobenzene	µg/kg	dry	3	0				1.2	1.4	1.6
1,2,4,5-Tetrachlorobenzene	µg/kg	dry	3	0				7.2	8.3	9.8
1,2-Dibromo-3-chloropropane	µg/kg	dry	3	0				1.3	1.5	1.7
1,2-Dibromoethane	µg/kg	dry	3	0				1.2	1.4	1.6
1,2-Dichlorobenzene	µg/kg	dry	3	0				0.96	1.1	1.3
1,2-Dichloroethane	µg/kg	dry	3	0				0.99	1.2	1.4
1,2-Dichloropropane	µg/kg	dry	3	0				1.1	1.3	1.5
1,3-Dichlorobenzene	µg/kg	dry	3	0				1.1	1.3	1.5
1,4-Dichlorobenzene	µg/kg	dry	3	0				1.3	1.5	1.7
2-Hexanone	µg/kg	dry	3	0				9	11	13
4-Methyl-2-pentanone	µg/kg	dry	3	0				8.1	9	11
Acetone	µg/kg	dry	3	0				15	17	20
Benzene	µg/kg	dry	3	0				1.2	1.4	1.6
Bromodichloromethane	µg/kg	dry	3	0				0.78	0.9	1.1
Bromomethane	µg/kg	dry	3	0				1.2	1.4	1.6
Carbon disulfide	µg/kg	dry	3	0				2.3	2.6	3
Carbon tetrachloride	µg/kg	dry	3	0				0.89	1	1.2
Trichlorofluoromethane	µg/kg	dry	3	0				1.1	1.3	1.5
Trichlorotrifluoroethane	µg/kg	dry	3	0				1.1	1.3	1.5
Chlorobenzene	µg/kg	dry	3	0				1.1	1.2	1.4
Chloroethane	µg/kg	dry	3	0				1.2	1.4	1.6
Chloroform	µg/kg	dry	3	0				0.84	1	1.2
Chloromethane	µg/kg	dry	3	0				1.5	1.7	2
cis -1,2-Dichloroethene	µg/kg	dry	3	0				1.3	1.5	1.7
cis -1,3-Dichloropropene	µg/kg	dry	3	0				1.2	1.4	1.6
Cyclohexane	µg/kg	dry	3	0				0.99	1.2	1.4
Dichlorodifluoromethane	µg/kg	dry	3	0				1.1	1.2	1.4
Methylene chloride	µg/kg	dry	3	0				1.5	2.7	3.5

Table D-7. (cont.)

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Ethylbenzene	µg/kg	dry	3	0				0.84	1	1.2
Isopropylbenzene	µg/kg	dry	3	0				1	1.2	1.4
Methyl acetate	µg/kg	dry	3	0				1.1	1.3	1.5
Methyl-*tert* -butyl ether	µg/kg	dry	3	0				0.94	1.1	1.3
Methylcyclohexane	µg/kg	dry	3	0				1.1	1.3	1.5
Styrene	µg/kg	dry	3	0				1.1	1.3	1.5
Tetrachloroethene	µg/kg	dry	3	0				0.46	0.53	0.62
Toluene	µg/kg	dry	3	0				1.3	1.5	1.7
trans -1,2-Dichloroethene	µg/kg	dry	3	0				1.1	1.3	1.5
trans -1,3-Dichloropropene	µg/kg	dry	3	0				0.89	1	1.2
Bromoform	µg/kg	dry	3	0				0.96	1.1	1.3
Trichloroethene	µg/kg	dry	3	0				0.42	0.48	0.56
Vinyl chloride	µg/kg	dry	3	0				0.92	1.1	1.3

Table D-8. 2004 semivolatile organic compound summary statistics for marsh sediment—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
2,4,5-Trichlorophenol	µg/kg	dry	3	0				4.5	5.1	6
2,4,6-Trichlorophenol	µg/kg	dry	3	0				2.7	3.1	3.6
2,4-Dichlorophenol	µg/kg	dry	3	0				2.7	3.1	3.6
2,4-Dimethylphenol	µg/kg	dry	3	0				8.1	9	11
2,4-Dinitrophenol	µg/kg	dry	3	0				53	61	72
2,4-Dinitrotoluene	µg/kg	dry	3	0				4.2	4.8	5.6
2,6-Dinitrotoluene	µg/kg	dry	3	0				4.2	4.8	5.6
2-Chloronaphthalene	µg/kg	dry	3	0				5.3	6.1	7.2
2-Chlorophenol	µg/kg	dry	3	0				2.5	2.9	3.4
2-Methyl-4,6-dinitrophenol	µg/kg	dry	3	0				2.5	2.9	3.4
2-Methylnaphthalene	µg/kg	dry	3	3	6.3	8.3	9.6			
2-Methylphenol	µg/kg	dry	3	0				5	5.8	6.8
2-Nitroaniline	µg/kg	dry	3	0				4	4.6	5.4
2-Nitrophenol	µg/kg	dry	3	0				3.9	4.4	5.2
3,3'-Dichlorobenzidine	µg/kg	dry	3	0				5.5	6.3	7.4
3-Nitroaniline	µg/kg	dry	3	0				3.9	4.4	5.2
4-Bromophenyl ether	µg/kg	dry	3	0				2.1	2.4	2.8
4-Chloro-3-methylphenol	µg/kg	dry	3	0				3.1	3.6	4.2
4-Chloroaniline	µg/kg	dry	3	0				3.1	3.6	4.2
4-Chlorophenyl-phenyl ether	µg/kg	dry	3	0				3	3.4	4
4-Methylphenol	µg/kg	dry	3	0				4.3	4.9	5.8
4-Nitroaniline	µg/kg	dry	3	0				5	5.8	6.8
4-Nitrophenol	µg/kg	dry	3	0				45	51	60
Acenaphthene	µg/kg	dry	3	2	2.8	3.2	3.5	1.7	1.7	1.7
Acenaphthylene	µg/kg	dry	3	3	3.7	10	13			
Acetophenone	µg/kg	dry	3	0				18	21	24
Anthracene	µg/kg	dry	3	3	3.8	10	15			
Atrazine	µg/kg	dry	3	0				3.3	3.8	4.4
Benz[a]anthracene	µg/kg	dry	3	3	17	45	66			
Benzaldehyde	µg/kg	dry	3	1	19	19	19	13	14	15
Benzo[a]pyrene	µg/kg	dry	3	3	19	57	83			
Benzo[b]fluoranthene	µg/kg	dry	3	3	30	80	110			
Benzo[ghi]perylene	µg/kg	dry	3	3	15	43	58			
Benzo[k]fluoranthene	µg/kg	dry	3	3	11	29	43			
Biphenyl	µg/kg	dry	3	0				7.1	8.2	9.6
Bis[2-chloroethoxy]methane	µg/kg	dry	3	0				2	2.2	2.6
Bis[2-chloroethyl]ether	µg/kg	dry	3	0				3.6	4.1	4.8
Bis[2-chloroisopropyl]ether	µg/kg	dry	3	0				1.8	2.1	2.4

Table D-8. (cont.)

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Bis[2-Ethylhexyl]phthalate	µg/kg	dry	3	3	54	160	260			
Butylbenzyl phthalate	µg/kg	dry	3	3	10	12	13			
Caprolactam	µg/kg	dry	3	0				18	21	24
Carbazole	µg/kg	dry	3	3	2.9	4.9	6.9			
Chrysene	µg/kg	dry	3	3	24	61	91			
Dibenz[a,h]anthracene	µg/kg	dry	3	2	13	14	15	3.6	3.6	3.6
Dibenzofuran	µg/kg	dry	3	3	2.6	3	3.4			
Diethyl phthalate	µg/kg	dry	3	0				5.2	6	7
Dimethyl phthalate	µg/kg	dry	3	0				2.7	3.1	3.6
Di-*n* -butyl phthalate	µg/kg	dry	3	2	9.7	12	14	4.2	4.2	4.2
Di-*n* -octyl phthalate	µg/kg	dry	3	2	2.7	3.7	4.7	2	2	2
Fluoranthene	µg/kg	dry	3	3	42	100	170			
Fluorene	µg/kg	dry	3	2	4.3	4.5	4.6	2.8	2.8	2.8
Hexachlorobenzene	µg/kg	dry	3	0				3.1	3.6	4.2
Hexachlorobutadiene	µg/kg	dry	3	0				2.1	2.4	2.8
Hexachlorocyclopentadiene	µg/kg	dry	3	0				23	26	30
Hexachloroethane	µg/kg	dry	3	0				3.3	3.8	4.4
Indeno[1,2,3-cd]pyrene	µg/kg	dry	3	3	17	44	61			
Isophorone	µg/kg	dry	3	0				2.4	2.7	3.2
Naphthalene	µg/kg	dry	3	3	8.9	11	16			
Nitrobenzene	µg/kg	dry	3	0				3	3.4	4
N -nitroso-di-*n* -propylamine	µg/kg	dry	3	0				4.7	5.4	6.4
N -nitrosodiphenylamine	µg/kg	dry	3	0				3.3	3.8	4.4
Pentachlorophenol	µg/kg	dry	3	0				13	15	17
Phenanthrene	µg/kg	dry	3	3	18	38	59			
Phenol	µg/kg	dry	3	0				5	7	11
Pyrene	µg/kg	dry	3	3	32	80	120			
Total PAHs	µg/kg	dry	3	3	250	620	910			

Note: PAH - polycyclic aromatic hydrocarbon

Table D-9. 2004 pesticide/PCB summary statistics for marsh sediment—Reference

Analyte	Concentration Units	Measurement Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
4,4'-DDD	µg/kg	dry	3	3	1.4	2.8	4.2			
4,4'-DDE	µg/kg	dry	3	3	2.7	5.9	9.4			
4,4'-DDT	µg/kg	dry	3	3	12	22	30			
Aldrin	µg/kg	dry	3	0				0.37	0.59	0.99
α-Chlordane	µg/kg	dry	3	3	1.6	5	10			
α-Endosulfan	µg/kg	dry	3	1	7.5	7.5	7.5	0.81	1	1.1
α-Hexachlorocyclohexane	µg/kg	dry	3	2	0.23	0.28	0.32	0.99	0.99	0.99
β-Endosulfan	µg/kg	dry	3	1	1.6	1.6	1.6	0.098	1.6	3.2
β-Hexachlorocyclohexane	µg/kg	dry	3	1	3.8	3.8	3.8	4	4.9	5.8
δ-Hexachlorocyclohexane	µg/kg	dry	3	0				0.77	1.1	1.4
Dieldrin	µg/kg	dry	3	1	16	16	16	0.85	1.6	2.3
Endosulfan sulfate	µg/kg	dry	3	0				0.31	1	1.3
Endrin	µg/kg	dry	3	0				0.36	0.41	0.48
Endrin aldehyde	µg/kg	dry	3	0				0.74	1.1	1.4
Endrin ketone	µg/kg	dry	3	2	1.9	3.9	5.9	2.3	2.3	2.3
γ-Chlordane	µg/kg	dry	3	1	14	14	14	2.1	3.8	5.4
γ-Hexachlorocyclohexane	µg/kg	dry	3	0				0.15	0.17	0.2
Heptachlor	µg/kg	dry	3	1	0.35	0.35	0.35	0.15	0.57	0.99
Heptachlor epoxide	µg/kg	dry	3	0				0.54	1.4	2.8
Methoxychlor	µg/kg	dry	3	2	3	3.1	3.1	1.4	1.4	1.4
Toxaphene	µg/kg	dry	3	0				30	80	140
Aroclor® 1016	µg/kg	dry	3	0				2.7	3.1	3.6
Aroclor® 1221	µg/kg	dry	3	0				2.7	3.1	3.6
Aroclor® 1232	µg/kg	dry	3	0				2.7	3.1	3.6
Aroclor® 1242	µg/kg	dry	3	0				2.7	3.1	3.6
Aroclor® 1248	µg/kg	dry	3	1	120	120	120	2.7	2.8	2.9
Aroclor® 1254	µg/kg	dry	3	3	50	160	300			
Aroclor® 1260	µg/kg	dry	3	3	48	180	350			
PCBs	µg/kg	dry	3	3	98	380	770			

Note: PCB - polychlorinated biphenyl

Table D-10. 2004 dioxin and furan summary statistics for marsh sediment—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
2,3,7,8-Tetrachlorodibenzo-*p* -dioxin	ng/kg	dry	1	1	6.6	6.6	6.6			
1,2,3,7,8-Pentachlorodibenzo-*p* -dioxin	ng/kg	dry	1	1	4.5	4.5	4.5			
1,2,3,4,7,8-Hexachlorodibenzo-*p* -dioxin	ng/kg	dry	1	1	3.3	3.3	3.3			
1,2,3,6,7,8-Hexachlorodibenzo-*p* -dioxin	ng/kg	dry	1	1	32	32	32			
1,2,3,7,8,9-Hexachlorodibenzo-*p* -dioxin	ng/kg	dry	1	1	17	17	17			
1,2,3,4,6,7,8-Heptachlorodibenzo-*p* -dioxin	ng/kg	dry	1	1	260	260	260			
Octachlorodibenzo-*p* -dioxin	ng/kg	dry	1	1	3,400	3,400	3,400			
2,3,7,8-Tetrachlorodibenzofuran	ng/kg	dry	1	1	22	22	22			
1,2,3,7,8-Pentachlorodibenzofuran	ng/kg	dry	1	1	10	10	10			
2,3,4,7,8-Pentachlorodibenzofuran	ng/kg	dry	1	1	15	15	15			
1,2,3,4,7,8-Hexachlorodibenzofuran	ng/kg	dry	1	1	28	28	28			
1,2,3,6,7,8-Hexachlorodibenzofuran	ng/kg	dry	1	1	10	10	10			
2,3,4,6,7,8-Hexachlorodibenzofuran	ng/kg	dry	1	1	11	11	11			
1,2,3,7,8,9-Hexachlorodibenzofuran	ng/kg	dry	1	1	3.4	3.4	3.4			
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ng/kg	dry	1	1	100	100	100			
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ng/kg	dry	1	1	8.6	8.6	8.6			
Octachlorodibenzofuran	ng/kg	dry	1	1	230	230	230			
Total tetrachlorodibenzo-*p* -dioxins	ng/kg	dry	1	1	71	71	71			
Total pentachlorodibenzo-*p* -dioxins	ng/kg	dry	1	1	63	63	63			
Total hexachlorodibenzo-*p* -dioxins	ng/kg	dry	1	1	290	290	290			
Total heptachlorodibenzo-*p* -dioxins	ng/kg	dry	1	1	590	590	590			
Total tetrachlorodibenzofurans	ng/kg	dry	1	1	280	280	280			
Total pentachlorodibenzofurans	ng/kg	dry	1	1	200	200	200			
Total hexachlorodibenzofurans	ng/kg	dry	1	1	150	150	150			
Total heptachlorodibenzofurans	ng/kg	dry	1	1	230	230	230			

Table D-11. 2004 inorganic analyte summary statistics for marsh sediment—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Aluminum	mg/kg	dry	3	3	3,240	9,600	14,000			
Antimony	mg/kg	dry	3	1	2.87	2.87	2.87	1.3	1.3	1.3
Arsenic	mg/kg	dry	3	3	6.68	31.8	49.9			
Barium	mg/kg	dry	3	3	13.8	43.2	58.6			
Beryllium	mg/kg	dry	3	3	0.2	0.8	1.3			
Cadmium	mg/kg	dry	3	3	0.068	1.5	2.71			
Chromium	mg/kg	dry	3	3	15.6	55.1	90.3			
Cobalt	mg/kg	dry	3	3	0.94	9.5	15.8			
Copper	mg/kg	dry	3	3	34.5	191	314			
Iron	mg/kg	dry	3	3	7,530	20,700	32,300			
Lead	mg/kg	dry	3	3	82.2	143	180			
Manganese	mg/kg	dry	3	3	29.4	360	677			
Mercury	mg/kg	dry	3	3	0.18	0.8	1.4			
Nickel	mg/kg	dry	3	1	33.8	33.8	33.8	3.72	14.5	25.3
Selenium	mg/kg	dry	3	3	1.1	3.2	5.15			
Silver	mg/kg	dry	3	3	1.3	3.2	4.63			
Thallium	mg/kg	dry	3	0				0.056	0.23	0.38
Vanadium	mg/kg	dry	3	3	27.3	46.5	63.3			
Zinc	mg/kg	dry	3	3	27	222	374			
Cyanide	mg/kg	dry	3	3	0.2	0.7	1			
Calcium	mg/kg	dry	3	3	243	3,680	6,970			
Magnesium	mg/kg	dry	3	3	349	2,110	3,630			
Potassium	mg/kg	dry	3	3	378	1,030	1,740			
Sodium	mg/kg	dry	3	3	44.7	106	162			

Table D-12. 2004 conventional parameter summary statistics for marsh sediment—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Acid-volatile sulfide	mg/kg	dry	3	0				1	1	1
Total organic carbon	%	dry	3	3	4.9	7.2	8.8			
Percent silt	%	dry	3	3	29	31	34			
Percent clay	%	dry	3	3	10	14	16			
Phi class -3.00+ to -2.00	%	dry	3	3	0	0.5	0.86			
Phi class -2.00+ to -1.00	%	dry	3	3	1.6	1.9	2.4			
Phi class -1.00+ to 0.00	%	dry	3	3	3.5	8	11			
Phi class 0.00+ to 1.00	%	dry	3	3	7.5	12	17			
Phi class 1.00+ to 2.00	%	dry	3	3	9.6	12	15			
Phi class 2.00+ to 3.00	%	dry	3	3	13	18	26			
Phi class 3.00+ to 4.00	%	dry	3	3	3	3.7	4.9			

Table D-13. 2004 volatile organic compound summary statistics for river sediment—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
1,1,1-Trichloroethane	µg/kg	dry	10	0				0.77	1.2	2.4
1,1,2,2-Tetrachloroethane	µg/kg	dry	10	0				0.99	1.5	3
1,1,2-Trichloroethane	µg/kg	dry	10	0				0.94	1.4	2.8
1,1-Dichloroethane	µg/kg	dry	10	0				1.1	1.6	3.2
1,1-Dichloroethene	µg/kg	dry	10	0				0.94	1.4	2.8
1,2,4-Trichlorobenzene	µg/kg	dry	10	0				1.1	1.6	3.2
1,2,4,5-Tetrachlorobenzene	µg/kg	dry	10	0				6.7	30	100
1,2-Dibromo-3-chloropropane	µg/kg	dry	10	0				1.2	1.8	3.5
1,2-Dibromoethane	µg/kg	dry	10	0				1.1	1.7	3.2
1,2-Dichlorobenzene	µg/kg	dry	10	0				0.88	1.4	2.7
1,2-Dichloroethane	µg/kg	dry	10	0				0.91	1.4	2.8
1,2-Dichloropropane	µg/kg	dry	10	0				0.98	1.5	3
1,3-Dichlorobenzene	µg/kg	dry	10	1	6	6	6	0.96	1.5	2.9
1,4-Dichlorobenzene	µg/kg	dry	10	1	32	32	32	1.2	1.7	3.4
2-Butanone	µg/kg	dry	1	1	16	16	16			
2-Hexanone	µg/kg	dry	10	0				8.3	13	25
4-Methyl-2-pentanone	µg/kg	dry	10	0				7.5	12	23
Acetone	µg/kg	dry	10	3	87	5,000	16,000	14	21	30
Benzene	µg/kg	dry	10	0				1.1	1.7	3.2
Bromodichloromethane	µg/kg	dry	10	0				0.72	1.1	2.2
Bromomethane	µg/kg	dry	10	0				1.1	1.7	3.3
Carbon disulfide	µg/kg	dry	10	4	3.6	5.5	8.9	2.1	2.5	3.1
Carbon tetrachloride	µg/kg	dry	10	0				0.81	1.3	2.5
Trichlorofluoromethane	µg/kg	dry	10	0				0.99	1.5	3
Trichlorotrifluoroethane	µg/kg	dry	10	0				1	1.6	3
Chlorobenzene	µg/kg	dry	10	0				0.95	1.5	2.9
Chloroethane	µg/kg	dry	10	0				1.1	1.6	3.2
Chloroform	µg/kg	dry	10	0				0.77	1.2	2.4
Chloromethane	µg/kg	dry	10	0				1.4	2.1	4.1
cis-1,2-Dichloroethene	µg/kg	dry	10	0				1.2	1.8	3.4
cis-1,3-Dichloropropene	µg/kg	dry	10	0				1.1	1.6	3.1
Cyclohexane	µg/kg	dry	10	0				0.91	1.4	2.8
Dichlorodifluoromethane	µg/kg	dry	10	0				0.95	1.5	2.9

Table D-13. (cont.)

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Methylene chloride	µg/kg	dry	10	0				3.2	5.3	8.2
Ethylbenzene	µg/kg	dry	10	0				0.77	1.2	2.4
Isopropylbenzene	µg/kg	dry	10	0				0.92	1.4	2.8
Methyl acetate	µg/kg	dry	10	0				0.99	1.5	3
Methyl-*tert*-butyl ether	µg/kg	dry	10	0				0.87	1.3	2.6
Methylcyclohexane	µg/kg	dry	10	0				0.96	1.5	2.9
Styrene	µg/kg	dry	10	0				0.99	1.5	3
Tetrachloroethene	µg/kg	dry	10	0				0.42	0.6	1.3
Toluene	µg/kg	dry	10	0				1.2	1.8	3.5
trans-1,2-Dichloroethene	µg/kg	dry	10	0				0.99	1.5	3
trans-1,3-Dichloropropene	µg/kg	dry	10	0				0.81	1.3	2.5
Bromoform	µg/kg	dry	10	0				0.88	1.4	2.7
Trichloroethene	µg/kg	dry	10	1	0.56	0.56	0.56	0.43	0.6	1.2
Vinyl chloride	µg/kg	dry	10	0				0.84	1.3	2.6

Table D-14. 2004 semivolatile organic compound summary statistics for river sediment—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
2,4,5-Trichlorophenol	µg/kg	dry	10	1	13	13	13	4.1	17	61
2,4,6-Trichlorophenol	µg/kg	dry	10	0				2.5	10	37
2,4-Dichlorophenol	µg/kg	dry	10	0				2.5	10	37
2,4-Dimethylphenol	µg/kg	dry	10	0				7.5	30	120
2,4-Dinitrophenol	µg/kg	dry	10	0				49	190	730
2,4-Dinitrotoluene	µg/kg	dry	10	1	17	17	17	3.8	15	57
2,6-Dinitrotoluene	µg/kg	dry	10	0				3.8	15	57
2-Chloronaphthalene	µg/kg	dry	10	0				4.9	19	73
2-Chlorophenol	µg/kg	dry	10	0				2.3	9	35
2-Methyl-4,6-dinitrophenol	µg/kg	dry	10	0				2.3	9	35
2-Methylnaphthalene	µg/kg	dry	10	8	3.5	15	33	1.7	1.9	2
2-Methylphenol	µg/kg	dry	10	0				4.6	18	69
2-Nitroaniline	µg/kg	dry	10	0				3.7	14	55
2-Nitrophenol	µg/kg	dry	10	0				3.6	14	53
3,3'-Dichlorobenzidine	µg/kg	dry	10	0				5	19	75
3-Nitroaniline	µg/kg	dry	10	0				3.6	14	53
4-Bromophenyl ether	µg/kg	dry	10	0				1.9	7	29
4-Chloro-3-methylphenol	µg/kg	dry	10	0				2.9	11	43
4-Chloroaniline	µg/kg	dry	10	1	6.8	6.8	6.8	2.9	12	43
4-Chlorophenyl-phenyl ether	µg/kg	dry	10	0				2.7	11	41
4-Methylphenol	µg/kg	dry	10	5	6.2	16	36	4	24	59
4-Nitroaniline	µg/kg	dry	10	0				4.6	18	69
4-Nitrophenol	µg/kg	dry	10	0				41	160	610
Acenaphthene	µg/kg	dry	10	5	2.7	4.5	9.6	1.4	8	21
Acenaphthylene	µg/kg	dry	10	9	3.3	22	50	2.4	2.4	2.4
Acetophenone	µg/kg	dry	10	1	24	24	24	17	70	250
Anthracene	µg/kg	dry	10	9	3.6	33	85	2.4	2.4	2.4
Atrazine	µg/kg	dry	10	0				3	12	45
Benz[a]anthracene	µg/kg	dry	10	10	3.2	80	230			
Benzaldehyde	µg/kg	dry	10	4	23	60	140	12	70	180
Benzo[a]pyrene	µg/kg	dry	10	10	3.6	90	250			
Benzo[b]fluoranthene	µg/kg	dry	10	9	28	150	370	4.2	4.2	4.2
Benzo[ghi]perylene	µg/kg	dry	10	9	15	80	240	3.9	3.9	3.9
Benzo[k]fluoranthene	µg/kg	dry	10	9	8.9	50	110	4.2	4.2	4.2
Biphenyl	µg/kg	dry	10	0				6.5	25	98

Table D-14. (cont.)

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Bis[2-chloroethoxy]methane	µg/kg	dry	10	0				1.8	7	27
Bis[2-chloroethyl]ether	µg/kg	dry	10	0				3.3	13	49
Bis[2-chloroisopropyl]ether	µg/kg	dry	10	0				1.7	6	25
Bis[2-Ethylhexyl]phthalate	µg/kg	dry	10	9	24	4,000	20,000	19	19	19
Butylbenzyl phthalate	µg/kg	dry	10	4	3.4	23	74	2.5	8	31
Caprolactam	µg/kg	dry	10	0				17	60	250
Carbazole	µg/kg	dry	10	7	1.9	7	17	2.2	16	27
Chrysene	µg/kg	dry	10	9	17	120	320	2.4	2.4	2.4
Dibenz[a,h]anthracene	µg/kg	dry	10	8	3.9	18	48	3.7	18	33
Dibenzofuran	µg/kg	dry	10	4	2.9	6	13	1.8	9	27
Diethyl phthalate	µg/kg	dry	10	0				4.8	18	71
Dimethyl phthalate	µg/kg	dry	10	0				2.5	10	37
Di-*n*-butyl phthalate	µg/kg	dry	10	5	4.6	16	40	3.6	15	53
Di-n-octyl phthalate	µg/kg	dry	10	1	78	78	78	1.7	5	25
Fluoranthene	µg/kg	dry	10	10	4.6	190	530			
Fluorene	µg/kg	dry	10	5	4.8	8	15	2.3	14	35
Hexachlorobenzene	µg/kg	dry	10	0				2.9	11	43
Hexachlorobutadiene	µg/kg	dry	10	0				1.9	7	29
Hexachlorocyclopentadiene	µg/kg	dry	10	0				21	80	310
Hexachloroethane	µg/kg	dry	10	0				3	12	45
Indeno[1,2,3-cd]pyrene	µg/kg	dry	10	9	14	70	170	3.2	3.2	3.2
Isophorone	µg/kg	dry	10	0				2.2	8	33
Naphthalene	µg/kg	dry	10	10	2.3	24	54			
Nitrobenzene	µg/kg	dry	10	0				2.7	11	41
N-nitroso-di-*n*-propylamine	µg/kg	dry	10	0				4.4	17	65
N-nitrosodiphenylamine	µg/kg	dry	10	2	7.6	44	80	3	10	45
Pentachlorophenol	µg/kg	dry	10	0				12	50	180
Phenanthrene	µg/kg	dry	10	9	7.1	50	120	2.2	2.2	2.2
Phenol	µg/kg	dry	10	3	14	40	100	9	17	49
Pyrene	µg/kg	dry	10	10	5.1	220	710			
Total PAHs	µg/kg	dry	10	10	35	1,100	3,300			

Note: PAH - polycyclic aromatic hydrocarbon

Table D-15. 2004 pesticide/PCB summary statistics for river sediment—Site

Analyte	Concentration Units	Measurement Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
4,4'-DDD	µg/kg	dry	10	9	0.66	12	37	0.82	0.82	0.82
4,4'-DDE	µg/kg	dry	10	9	0.36	12	59	32	32	32
4,4'-DDT	µg/kg	dry	10	10	0.38	20	140			
Aldrin	µg/kg	dry	10	3	1.2	2.5	4.1	0.34	0.9	3.1
α-Chlordane	µg/kg	dry	10	6	0.39	1.9	4.6	0.1	1.7	6.6
α-Endosulfan	µg/kg	dry	10	7	0.46	3	11	0.19	0.25	0.36
α-Hexachlorocyclohexane	µg/kg	dry	10	1	0.69	0.69	0.69	0.12	0.3	1.4
β-Endosulfan	µg/kg	dry	10	5	0.69	12	47	0.11	0.7	1.8
β-Hexachlorocyclohexane	µg/kg	dry	10	0				0.3	0.8	2
δ-Hexachlorocyclohexane	µg/kg	dry	10	1	0.41	0.41	0.41	0.19	0.8	5.4
Dieldrin	µg/kg	dry	10	1	0.54	0.54	0.54	0.53	2.4	6.7
Endosulfan sulfate	µg/kg	dry	10	1	1.9	1.9	1.9	0.33	0.48	0.86
Endrin	µg/kg	dry	10	1	7.4	7.4	7.4	0.33	0.9	3.4
Endrin aldehyde	µg/kg	dry	10	1	2.2	2.2	2.2	0.25	2	13
Endrin ketone	µg/kg	dry	10	1	0.55	0.55	0.55	0.12	3	17
γ-Chlordane	µg/kg	dry	10	10	0.27	10	47			
γ-Hexachlorocyclohexane	µg/kg	dry	10	2	0.45	2.2	3.9	0.14	0.28	0.82
Heptachlor	µg/kg	dry	10	0				0.14	0.7	2.8
Heptachlor epoxide	µg/kg	dry	10	1	0.68	0.68	0.68	0.24	2.1	5.4
Methoxychlor	µg/kg	dry	10	0				0.31	0.8	1.7
Toxaphene	µg/kg	dry	10	0				12	120	510
Aroclor® 1016	µg/kg	dry	10	0				2.5	8	53
Aroclor® 1221	µg/kg	dry	10	0				2.5	8	53
Aroclor® 1232	µg/kg	dry	10	0				2.5	8	53
Aroclor® 1242	µg/kg	dry	10	0				2.5	8	53
Aroclor® 1248	µg/kg	dry	10	10	6.6	600	4,600			
Aroclor® 1254	µg/kg	dry	10	10	8.4	500	3,400			
Aroclor® 1260	µg/kg	dry	10	10	5.3	300	1,500			
PCBs	µg/kg	dry	10	10	21	1,400	9,500			

Note: PCB - polychlorinated biphenyl

Table D-16. 2004 dioxin and furan summary statistics for river sediment—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
2,3,7,8-Tetrachlorodibenzo-*p*-dioxin	ng/kg	dry	2	2	0.48	0.49	0.5			
1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin	ng/kg	dry	2	2	0.28	0.32	0.36			
1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin	ng/kg	dry	2	2	0.41	0.44	0.47			
1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin	ng/kg	dry	2	2	1.8	2.3	2.8			
1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin	ng/kg	dry	2	2	1.5	1.8	2.1			
1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin	ng/kg	dry	2	2	19	33	47			
Octachlorodibenzo-*p*-dioxin	ng/kg	dry	2	2	500	900	1,400			
2,3,7,8-Tetrachlorodibenzofuran	ng/kg	dry	2	2	1.9	1.9	1.9			
1,2,3,7,8-Pentachlorodibenzofuran	ng/kg	dry	2	2	0.78	0.81	0.84			
2,3,4,7,8-Pentachlorodibenzofuran	ng/kg	dry	2	2	1	1	1			
1,2,3,4,7,8-Hexachlorodibenzofuran	ng/kg	dry	2	2	2.3	2.6	3			
1,2,3,6,7,8-Hexachlorodibenzofuran	ng/kg	dry	2	2	0.89	1	1.1			
2,3,4,6,7,8-Hexachlorodibenzofuran	ng/kg	dry	2	2	1	1.1	1.2			
1,2,3,7,8,9-Hexachlorodibenzofuran	ng/kg	dry	2	1	0.15	0.15	0.15	0.12	0.12	0.12
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ng/kg	dry	2	2	10	11	11			
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ng/kg	dry	2	2	0.73	0.8	0.9			
Octachlorodibenzofuran	ng/kg	dry	2	2	31	32	32			
Total tetrachlorodibenzo-*p*-dioxins	ng/kg	dry	2	2	4.1	7	10			
Total pentachlorodibenzo-*p*-dioxins	ng/kg	dry	2	2	4.2	5.3	6.4			
Total hexachlorodibenzo-*p*-dioxins	ng/kg	dry	2	2	17	21	26			
Total heptachlorodibenzo-*p*-dioxins	ng/kg	dry	2	2	48	80	100			
Total tetrachlorodibenzofurans	ng/kg	dry	2	2	21	22	23			
Total pentachlorodibenzofurans	ng/kg	dry	2	2	13	15	16			
Total hexachlorodibenzofurans	ng/kg	dry	2	2	12	13	14			
Total heptachlorodibenzofurans	ng/kg	dry	2	2	18	22	26			

Table D-17. 2004 inorganic analyte summary statistics for river sediment—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Aluminum	mg/kg	dry	10	10	4,120	12,600	21,900			
Antimony	mg/kg	dry	10	2	5.78	11.8	17.8	0.27	2.5	13.7
Arsenic	mg/kg	dry	10	10	9.13	97	311			
Barium	mg/kg	dry	10	10	13.8	64	156			
Beryllium	mg/kg	dry	10	10	0.28	0.8	1.3			
Cadmium	mg/kg	dry	10	10	0.1	0.8	2.82			
Chromium	mg/kg	dry	10	10	20.4	132	447			
Cobalt	mg/kg	dry	10	10	2.99	7	15.3			
Copper	mg/kg	dry	10	10	21.8	225	695			
Iron	mg/kg	dry	10	10	19,200	41,500	63,500			
Lead	mg/kg	dry	10	10	15.2	110	265			
Manganese	mg/kg	dry	10	10	68.4	223	358			
Mercury	mg/kg	dry	10	10	0.062	1.4	4.03			
Nickel	mg/kg	dry	10	1	6.84	6.84	6.84	5.85	20.3	36.3
Selenium	mg/kg	dry	10	10	0.4	3	10			
Silver	mg/kg	dry	10	10	0.15	5.2	29.2			
Thallium	mg/kg	dry	10	0				0.049	0.19	0.38
Vanadium	mg/kg	dry	10	10	20.2	92	183			
Zinc	mg/kg	dry	10	10	63	214	507			
Cyanide	mg/kg	dry	10	2	0.3	0.35	0.4	0.2	0.2	0.2
Calcium	mg/kg	dry	10	10	609	2,230	3,730			
Magnesium	mg/kg	dry	10	10	1,200	4,310	7,570			
Potassium	mg/kg	dry	10	10	514	1,830	2,920			
Sodium	mg/kg	dry	10	10	1,200	4,200	10,500			

Table D-18. 2004 conventional parameter summary statistics for river sediment—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Acid-volatile sulfide	mg/kg	dry	10	10	2.4	900	5,700			
Total organic carbon	%	dry	10	10	0.74	2.7	6.1			
Percent silt	%	dry	10	10	7.1	38	65			
Percent clay	%	dry	10	10	3.6	16	48			
Phi class -3.00+ to -2.00	%	dry	10	10	0	5	21			
Phi class -2.00+ to -1.00	%	dry	10	10	0.7	2.9	7.6			
Phi class -1.00+ to 0.00	%	dry	10	10	1	4.9	9.9			
Phi class 0.00+ to 1.00	%	dry	10	10	0.66	7	26			
Phi class 1.00+ to 2.00	%	dry	10	10	0.89	8	20			
Phi class 2.00+ to 3.00	%	dry	10	10	5.5	14	32			
Phi class 3.00+ to 4.00	%	dry	10	10	0.85	2.7	5.9			

Table D-19. 2004 volatile organic compound summary statistics for river sediment—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
1,1,1-Trichloroethane	µg/kg	dry	5	0				0.76	1.2	2
1,1,2,2-Tetrachloroethane	µg/kg	dry	5	0				0.97	1.6	2.6
1,1,2-Trichloroethane	µg/kg	dry	5	0				0.92	1.5	2.5
1,1-Dichloroethane	µg/kg	dry	5	0				1.1	1.7	2.8
1,1-Dichloroethene	µg/kg	dry	5	0				0.92	1.5	2.5
1,2,4-Trichlorobenzene	µg/kg	dry	5	0				1.1	1.7	2.8
1,2,4,5-Tetrachlorobenzene	µg/kg	dry	5	0				6.6	13	22
1,2-Dibromo-3-chloropropane	µg/kg	dry	5	0				1.2	1.8	3
1,2-Dibromoethane	µg/kg	dry	5	0				1.1	1.7	2.8
1,2-Dichlorobenzene	µg/kg	dry	5	0				0.87	1.4	2.3
1,2-Dichloroethane	µg/kg	dry	5	0				0.89	1.5	2.4
1,2-Dichloropropane	µg/kg	dry	5	0				0.96	1.6	2.6
1,3-Dichlorobenzene	µg/kg	dry	5	0				0.95	1.5	2.5
1,4-Dichlorobenzene	µg/kg	dry	5	0				1.1	1.8	2.9
2-Hexanone	µg/kg	dry	5	0				8.2	13	22
4-Methyl-2-pentanone	µg/kg	dry	5	0				7.4	12	20
Acetone	µg/kg	dry	5	1	150	150	150	14	39	54
Benzene	µg/kg	dry	5	0				1.1	1.7	2.8
Bromodichloromethane	µg/kg	dry	5	0				0.71	1.1	1.9
Bromomethane	µg/kg	dry	5	0				1.1	1.8	2.9
Carbon disulfide	µg/kg	dry	5	1	4.8	4.8	4.8	2	3.2	5.3
Carbon tetrachloride	µg/kg	dry	5	0				0.8	1.3	2.2
Trichlorofluoromethane	µg/kg	dry	5	0				0.97	1.6	2.6
Trichlorotrifluoroethane	µg/kg	dry	5	0				0.99	1.6	2.6
Chlorobenzene	µg/kg	dry	5	0				0.93	1.5	2.5
Chloroethane	µg/kg	dry	5	0				1.1	1.7	2.8
Chloroform	µg/kg	dry	5	0				0.76	1.2	2
Chloromethane	µg/kg	dry	5	0				1.4	2.1	3.5
cis -1,2-Dichloroethene	µg/kg	dry	5	0				1.2	1.8	3
cis -1,3-Dichloropropene	µg/kg	dry	5	0				1.1	1.7	2.7
Cyclohexane	µg/kg	dry	5	0				0.89	1.5	2.4
Dichlorodifluoromethane	µg/kg	dry	5	0				0.93	1.5	2.5
Methylene chloride	µg/kg	dry	5	0				4.1	5.7	7.3

Table D-19. (cont.)

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Ethylbenzene	µg/kg	dry	5	0				0.76	1.2	2
Isopropylbenzene	µg/kg	dry	5	0				0.91	1.5	2.4
Methyl acetate	µg/kg	dry	5	0				0.97	1.6	2.6
Methyl-*tert*-butyl ether	µg/kg	dry	5	0				0.85	1.4	2.3
Methylcyclohexane	µg/kg	dry	5	0				0.95	1.5	2.5
Styrene	µg/kg	dry	5	0				0.97	1.6	2.6
Tetrachloroethene	µg/kg	dry	5	0				0.42	0.7	1.1
Toluene	µg/kg	dry	5	0				1.2	1.8	3
trans-1,2-Dichloroethene	µg/kg	dry	5	0				0.97	1.6	2.6
trans-1,3-Dichloropropene	µg/kg	dry	5	0				0.8	1.3	2.2
Bromoform	µg/kg	dry	5	0				0.87	1.4	2.3
Trichloroethene	µg/kg	dry	5	0				0.38	0.6	0.99
Vinyl chloride	µg/kg	dry	5	0				0.83	1.3	2.2

Table D-20. 2004 semivolatile organic compound summary statistics for river sediment—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
2,4,5-Trichlorophenol	µg/kg	dry	5	0				4	8	14
2,4,6-Trichlorophenol	µg/kg	dry	5	0				2.4	4.6	7.9
2,4-Dichlorophenol	µg/kg	dry	5	0				2.4	4.6	7.9
2,4-Dimethylphenol	µg/kg	dry	5	0				7.4	15	25
2,4-Dinitrophenol	µg/kg	dry	5	0				48	90	160
2,4-Dinitrotoluene	µg/kg	dry	5	0				3.8	7	13
2,6-Dinitrotoluene	µg/kg	dry	5	0				3.8	7	13
2-Chloronaphthalene	µg/kg	dry	5	0				4.8	9	16
2-Chlorophenol	µg/kg	dry	5	0				2.3	4.4	7.5
2-Methyl-4,6-dinitrophenol	µg/kg	dry	5	0				2.3	4.4	7.5
2-Methylnaphthalene	µg/kg	dry	5	4	4.6	12	26	1.6	1.6	1.6
2-Methylphenol	µg/kg	dry	5	0				4.6	9	15
2-Nitroaniline	µg/kg	dry	5	0				3.6	7	12
2-Nitrophenol	µg/kg	dry	5	0				3.5	7	12
3,3'-Dichlorobenzidine	µg/kg	dry	5	0				5	10	17
3-Nitroaniline	µg/kg	dry	5	0				3.5	7	12
4-Bromophenyl ether	µg/kg	dry	5	0				1.9	3.6	6.2
4-Chloro-3-methylphenol	µg/kg	dry	5	0				2.8	5.4	9.3
4-Chloroaniline	µg/kg	dry	5	0				2.8	5.4	9.3
4-Chlorophenyl-phenyl ether	µg/kg	dry	5	0				2.7	5.2	8.8
4-Methylphenol	µg/kg	dry	5	4	7.5	19	44	3.9	3.9	3.9
4-Nitroaniline	µg/kg	dry	5	0				4.6	9	15
4-Nitrophenol	µg/kg	dry	5	0				40	80	140
Acenaphthene	µg/kg	dry	5	4	1.8	5	11	1.4	1.4	1.4
Acenaphthylene	µg/kg	dry	5	4	6.9	19	40	1.9	1.9	1.9
Acetophenone	µg/kg	dry	5	0				16	31	53
Anthracene	µg/kg	dry	5	4	7.3	31	71	1.9	1.9	1.9
Atrazine	µg/kg	dry	5	0				3	5.7	9.7
Benz[a]anthracene	µg/kg	dry	5	5	7.1	60	150			
Benzaldehyde	µg/kg	dry	5	2	23	28	32	12	22	39
Benzo[a]pyrene	µg/kg	dry	5	5	11	70	170			
Benzo[b]fluoranthene	µg/kg	dry	5	5	15	100	230			
Benzo[ghi]perylene	µg/kg	dry	5	5	11	60	130			
Benzo[k]fluoranthene	µg/kg	dry	5	5	4	33	77			
Biphenyl	µg/kg	dry	5	0				6.4	13	22

Table D-20. (cont.)

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Bis[2-chloroethoxy]methane	µg/kg	dry	5	0				1.8	3.4	5.8
Bis[2-chloroethyl]ether	µg/kg	dry	5	0				3.2	6	11
Bis[2-chloroisopropyl]ether	µg/kg	dry	5	0				1.6	3.1	5.3
Bis[2-Ethylhexyl]phthalate	µg/kg	dry	5	5	38	600	2,000			
Butylbenzyl phthalate	µg/kg	dry	5	2	10	18	25	2	2.5	3.1
Caprolactam	µg/kg	dry	5	0				16	31	53
Carbazole	µg/kg	dry	5	4	2.8	8	14	1.8	1.8	1.8
Chrysene	µg/kg	dry	5	5	7.5	50	130			
Dibenz[a,h]anthracene	µg/kg	dry	5	5	3.7	14	32			
Dibenzofuran	µg/kg	dry	5	3	5.3	9	16	1.8	1.9	2
Diethyl phthalate	µg/kg	dry	5	0				4.7	9	16
Dimethyl phthalate	µg/kg	dry	5	0				2.4	4.6	7.9
Di-*n*-butyl phthalate	µg/kg	dry	5	4	5.8	12	22	3.5	3.5	3.5
Di-n-octyl phthalate	µg/kg	dry	5	0				1.6	3.1	5.3
Fluoranthene	µg/kg	dry	5	5	12	120	320			
Fluorene	µg/kg	dry	5	4	2.7	10	22	2.3	2.3	2.3
Hexachlorobenzene	µg/kg	dry	5	0				2.8	5.4	9.3
Hexachlorobutadiene	µg/kg	dry	5	0				1.9	3.6	6.2
Hexachlorocyclopentadiene	µg/kg	dry	5	0				20	39	66
Hexachloroethane	µg/kg	dry	5	0				3	5.7	9.7
Indeno[1,2,3-cd]pyrene	µg/kg	dry	5	5	9.4	50	120			
Isophorone	µg/kg	dry	5	0				2.2	4.2	7.1
Naphthalene	µg/kg	dry	5	5	2.2	24	50			
Nitrobenzene	µg/kg	dry	5	0				2.7	5.2	8.8
N-nitroso-di-*n*-propylamine	µg/kg	dry	5	0				4.3	9	15
N-nitrosodiphenylamine	µg/kg	dry	5	2	12	19	26	3	4.7	7.8
Pentachlorophenol	µg/kg	dry	5	0				12	22	38
Phenanthrene	µg/kg	dry	5	5	4.1	40	110			
Phenol	µg/kg	dry	5	3	13	24	41	7	10	12
Pyrene	µg/kg	dry	5	5	13	130	340			
Total PAHs	µg/kg	dry	5	5	100	800	2,000			

Note: PAH - polycyclic aromatic hydrocarbon

Table D-21. 2004 pesticide/PCB summary statistics for river sediment—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
4,4'-DDD	µg/kg	dry	5	5	1.1	13	34			
4,4'-DDE	µg/kg	dry	5	5	1.1	30	110			
4,4'-DDT	µg/kg	dry	5	5	1.2	19	62			
Aldrin	µg/kg	dry	5	1	0.51	0.51	0.51	0.39	1.8	5.5
α-Chlordane	µg/kg	dry	5	3	0.35	5	11	0.13	0.29	0.44
α-Endosulfan	µg/kg	dry	5	2	3.9	4.3	4.7	0.2	0.26	0.35
α-Hexachlorocyclohexane	µg/kg	dry	5	1	0.46	0.46	0.46	0.12	0.6	1.9
β-Endosulfan	µg/kg	dry	5	2	0.28	0.53	0.77	0.76	5	11
β-Hexachlorocyclohexane	µg/kg	dry	5	0				0.34	1.8	4.9
δ-Hexachlorocyclohexane	µg/kg	dry	5	0				0.19	0.9	3.1
Dieldrin	µg/kg	dry	5	0				0.13	5	23
Endosulfan sulfate	µg/kg	dry	5	0				0.28	1.4	4.7
Endrin	µg/kg	dry	5	1	5.7	5.7	5.7	0.32	1.6	5.3
Endrin aldehyde	µg/kg	dry	5	0				0.22	1.2	3.6
Endrin ketone	µg/kg	dry	5	2	0.57	0.59	0.6	0.76	5	11
γ-Chlordane	µg/kg	dry	5	4	1	19	56	0.42	0.42	0.42
γ-Hexachlorocyclohexane	µg/kg	dry	5	1	0.89	0.89	0.89	0.14	0.7	2.2
Heptachlor	µg/kg	dry	5	0				0.13	0.6	2.2
Heptachlor epoxide	µg/kg	dry	5	0				0.31	4	11
Methoxychlor	µg/kg	dry	5	0				0.26	1.3	4.2
Toxaphene	µg/kg	dry	5	0				9.7	210	900
Aroclor® 1016	µg/kg	dry	5	0				2.4	11	40
Aroclor® 1221	µg/kg	dry	5	0				2.4	11	40
Aroclor® 1232	µg/kg	dry	5	0				2.4	11	40
Aroclor® 1242	µg/kg	dry	5	0				2.4	11	40
Aroclor® 1248	µg/kg	dry	5	5	20	500	2,000			
Aroclor® 1254	µg/kg	dry	5	5	20	500	2,000			
Aroclor® 1260	µg/kg	dry	5	5	14	220	710			
PCBs	µg/kg	dry	5	5	58	1,200	4,700			

Table D-22. 2004 dioxin and furan summary statistics for river sediment—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
2,3,7,8-Tetrachlorodibenzo-*p*-dioxin	ng/kg	dry	1	1	1.2	1.2	1.2			
1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin	ng/kg	dry	1	1	0.75	0.75	0.75			
1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin	ng/kg	dry	1	1	0.54	0.54	0.54			
1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin	ng/kg	dry	1	1	5.3	5.3	5.3			
1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin	ng/kg	dry	1	1	3.6	3.6	3.6			
1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin	ng/kg	dry	1	1	68	68	68			
Octachlorodibenzo-*p*-dioxin	ng/kg	dry	1	1	1,300	1,300	1,300			
2,3,7,8-Tetrachlorodibenzofuran	ng/kg	dry	1	1	3.5	3.5	3.5			
1,2,3,7,8-Pentachlorodibenzofuran	ng/kg	dry	1	1	1.4	1.4	1.4			
2,3,4,7,8-Pentachlorodibenzofuran	ng/kg	dry	1	1	1.7	1.7	1.7			
1,2,3,4,7,8-Hexachlorodibenzofuran	ng/kg	dry	1	1	4.4	4.4	4.4			
1,2,3,6,7,8-Hexachlorodibenzofuran	ng/kg	dry	1	1	1.8	1.8	1.8			
2,3,4,6,7,8-Hexachlorodibenzofuran	ng/kg	dry	1	1	2	2	2			
1,2,3,7,8,9-Hexachlorodibenzofuran	ng/kg	dry	1	0				0.47	0.47	0.47
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ng/kg	dry	1	1	21	21	21			
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ng/kg	dry	1	1	1.1	1.1	1.1			
Octachlorodibenzofuran	ng/kg	dry	1	1	31	31	31			
Total tetrachlorodibenzo-*p*-dioxins	ng/kg	dry	1	1	5.6	5.6	5.6			
Total pentachlorodibenzo-*p*-dioxins	ng/kg	dry	1	1	6.2	6.2	6.2			
Total hexachlorodibenzo-*p*-dioxins	ng/kg	dry	1	1	51	51	51			
Total heptachlorodibenzo-*p*-dioxins	ng/kg	dry	1	1	170	170	170			
Total tetrachlorodibenzofurans	ng/kg	dry	1	1	58	58	58			
Total pentachlorodibenzofurans	ng/kg	dry	1	1	24	24	24			
Total hexachlorodibenzofurans	ng/kg	dry	1	1	29	29	29			
Total heptachlorodibenzofurans	ng/kg	dry	1	1	43	43	43			

Table D-23. 2004 inorganic analyte summary statistics for river sediment—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Aluminum	mg/kg	dry	5	5	3,780	14,900	28,600			
Antimony	mg/kg	dry	5	2	5.88	12.8	19.8	1.7	2.5	3.34
Arsenic	mg/kg	dry	5	5	5.95	43.3	98.9			
Barium	mg/kg	dry	5	5	26.6	65	107			
Beryllium	mg/kg	dry	5	5	0.33	0.8	1.4			
Cadmium	mg/kg	dry	5	5	0.13	1	3.13			
Chromium	mg/kg	dry	5	5	19.1	80	171			
Cobalt	mg/kg	dry	5	5	3.51	8.9	14.8			
Copper	mg/kg	dry	5	5	25.4	203	475			
Iron	mg/kg	dry	5	5	22,200	35,300	53,500			
Lead	mg/kg	dry	5	5	42.3	132	239			
Manganese	mg/kg	dry	5	5	60.3	263	517			
Mercury	mg/kg	dry	5	5	0.078	1.3	3.88			
Nickel	mg/kg	dry	5	3	35.3	40.7	45	8.38	8.68	8.98
Selenium	mg/kg	dry	5	5	0.3	4.5	10.3			
Silver	mg/kg	dry	5	5	0.21	2.9	7.82			
Thallium	mg/kg	dry	5	0				0.042	0.24	0.53
Vanadium	mg/kg	dry	5	5	21.7	64	115			
Zinc	mg/kg	dry	5	5	66	232	430			
Cyanide	mg/kg	dry	5	3	0.4	0.6	0.8	0.2	0.2	0.2
Calcium	mg/kg	dry	5	5	999	3,120	4,960			
Magnesium	mg/kg	dry	5	5	1,310	4,780	8,810			
Potassium	mg/kg	dry	5	5	565	2,200	4,000			
Sodium	mg/kg	dry	5	5	1,030	4,040	8,250			

Table D-24. 2004 conventional parameter summary statistics for river sediment—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Acid-volatile sulfide	mg/kg	dry	5	5	27	150	490			
Total organic carbon	%	dry	5	5	0.6	3.2	7.1			
Percent silt	%	dry	5	5	3.1	34	70			
Percent clay	%	dry	5	5	2.1	16	27			
Phi class -3.00+ to -2.00	%	dry	5	5	0	9	29			
Phi class -2.00+ to -1.00	%	dry	5	5	0.91	3.6	5.9			
Phi class -1.00+ to 0.00	%	dry	5	5	1.9	3.6	5.4			
Phi class 0.00+ to 1.00	%	dry	5	5	1.2	7	17			
Phi class 1.00+ to 2.00	%	dry	5	5	1.2	13	28			
Phi class 2.00+ to 3.00	%	dry	5	5	2	12	26			
Phi class 3.00+ to 4.00	%	dry	5	5	0.45	1.3	2.7			

Table D-25. 2004 semivolatile organic compound summary statistics for marsh vegetation—Site

Analyte	Concentration Units	Measurement Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
2,4,5-Trichlorophenol	µg/kg	wet	6	1	17	17	17	11	11	11
2,4,6-Trichlorophenol	µg/kg	wet	6	1	10	10	10	8.8	10	13
2,4-Dichlorophenol	µg/kg	wet	6	0				12	13	17
2,4-Dimethylphenol	µg/kg	wet	6	0				13	14	19
2,4-Dinitrophenol	µg/kg	wet	6	0				23	25	33
2,4-Dinitrotoluene	µg/kg	wet	6	0				8.5	9	12
2,6-Dinitrotoluene	µg/kg	wet	6	0				7	7.5	9.8
2-Chloronaphthalene	µg/kg	wet	6	0				5.9	6.3	8.3
2-Chlorophenol	µg/kg	wet	6	0				11	12	16
2-Methyl-4,6-dinitrophenol	µg/kg	wet	6	0				15	16	21
2-Methylnaphthalene	µg/kg	wet	6	0				1	2.1	4.2
2-Methylphenol	µg/kg	wet	6	0				53	57	75
2-Nitroaniline	µg/kg	wet	6	0				26	28	37
2-Nitrophenol	µg/kg	wet	6	0				15	16	21
3,3'-Dichlorobenzidine	µg/kg	wet	6	0				780	800	1,100
3-Nitroaniline	µg/kg	wet	6	0				8.9	10	13
4-Bromophenyl ether	µg/kg	wet	6	0				5.5	5.9	7.7
4-Chloro-3-methylphenol	µg/kg	wet	6	0				72	100	180
4-Chloroaniline	µg/kg	wet	6	0				5.9	6.3	8.3
4-Chlorophenyl-phenyl ether	µg/kg	wet	6	0				4.5	4.8	6.3
4-Methylphenol	µg/kg	wet	6	1	29	29	29	15	15	15
4-Nitroaniline	µg/kg	wet	6	0				26	28	37
4-Nitrophenol	µg/kg	wet	6	1	130	130	130	7.5	10	20
Acenaphthene	µg/kg	wet	6	6	0.39	0.53	0.71			
Acenaphthylene	µg/kg	wet	6	6	0.94	1.5	2.4			
Acetophenone	µg/kg	wet	6	6	21	30	39			
Anthracene	µg/kg	wet	6	6	1.3	1.9	2.6			
Atrazine	µg/kg	wet	6	0				5.5	5.9	7.7
Benz[a]anthracene	µg/kg	wet	6	6	4.6	8	14			
Benzaldehyde	µg/kg	wet	6	0				730	800	1,100
Benzo[a]pyrene	µg/kg	wet	6	6	5.9	11	17			
Benzo[b]fluoranthene	µg/kg	wet	6	6	7.2	13	25			
Benzo[ghi]perylene	µg/kg	wet	6	6	5.5	11	16			
Benzo[k]fluoranthene	µg/kg	wet	6	6	8.5	14	25			
Biphenyl	µg/kg	wet	6	1	5.2	5.2	5.2	4.7	5.1	6.6

Table D-25. (cont.)

Analyte	Concentration Units	Measurement Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Bis[2-chloroethoxy]methane	µg/kg	wet	6	0				5	5.3	7
Bis[2-chloroethyl]ether	µg/kg	wet	6	0				8.7	9	13
Bis[2-chloroisopropyl]ether	µg/kg	wet	6	0				11	12	16
Bis[2-Ethylhexyl]phthalate	µg/kg	wet	6	0				53	110	400
Butylbenzyl phthalate	µg/kg	wet	6	0				14	15	20
Caprolactam	µg/kg	wet	6	0				13	14	19
Carbazole	µg/kg	wet	6	0				33	35	47
Chrysene	µg/kg	wet	6	6	6.8	13	26			
Dibenz[a,h]anthracene	µg/kg	wet	6	6	1.2	2.6	3.7			
Dibenzofuran	µg/kg	wet	6	4	0.75	0.9	1.1	0.55	0.58	0.6
Diethyl phthalate	µg/kg	wet	6	0				9.4	10	14
Dimethyl phthalate	µg/kg	wet	6	0				5.1	5.5	7.2
Di-*n* -butyl phthalate	µg/kg	wet	6	0				140	210	490
Di-*n* -octyl phthalate	µg/kg	wet	6	0				13	14	19
Fluoranthene	µg/kg	wet	6	6	9.8	21	40			
Fluorene	µg/kg	wet	6	6	0.53	0.72	0.94			
Hexachlorobenzene	µg/kg	wet	6	0				5.9	6.3	8.3
Hexachlorobutadiene	µg/kg	wet	6	0				8.5	9	12
Hexachlorocyclopentadiene	µg/kg	wet	6	0				5,000	5,300	7,000
Hexachloroethane	µg/kg	wet	6	0				8.5	9	12
Indeno[1,2,3-cd]pyrene	µg/kg	wet	6	6	6.6	12	20			
Isophorone	µg/kg	wet	6	1	58	58	58	5.8	6.3	8.2
Naphthalene	µg/kg	wet	6	0				5	6.5	7.3
Nitrobenzene	µg/kg	wet	6	0				10	11	14
N -nitroso-di-*n* -propylamine	µg/kg	wet	6	0				8.2	9	12
N -nitrosodiphenylamine	µg/kg	wet	6	1	40	40	40	9.5	10	14
Pentachlorophenol	µg/kg	wet	6	0				31	140	360
Phenanthrene	µg/kg	wet	6	6	4.5	9	14			
Phenol	µg/kg	wet	6	6	31	60	170			
Pyrene	µg/kg	wet	6	6	10	17	29			
Total PAHs	µg/kg	wet	6	6	78	140	240			

Note: PAH - polycyclic aromatic hydrocarbon
Marsh vegetation samples contained live tuberous roots and basal stems of *Phragmites* .

Table D-26. 2004 pesticide/PCB summary statistics for marsh vegetation—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
4,4'-DDD	µg/kg	wet	6	1	2.4	2.4	2.4	1.1	1.2	1.4
4,4'-DDE	µg/kg	wet	6	2	2.1	2.2	2.3	1	1.1	1.1
4,4'-DDT	µg/kg	wet	6	2	2	4.3	6.5	0.39	0.9	1.1
Aldrin	µg/kg	wet	6	1	2.9	2.9	2.9	1.1	2.5	6.5
α-Chlordane	µg/kg	wet	6	0				0.37	0.6	2
α-Endosulfan	µg/kg	wet	6	2	1.7	1.9	2.1	0.48	0.9	1.3
α-Hexachlorocyclohexane	µg/kg	wet	6	1	0.25	0.25	0.25	0.17	0.4	1
β-Endosulfan	µg/kg	wet	6	1	1.2	1.2	1.2	0.36	0.9	1.5
β-Hexachlorocyclohexane	µg/kg	wet	6	0				0.22	0.9	1.1
δ-Hexachlorocyclohexane	µg/kg	wet	6	1	3.4	3.4	3.4	0.35	0.5	1.1
Dieldrin	µg/kg	wet	6	0				0.77	1.5	3.6
Endosulfan sulfate	µg/kg	wet	6	0				0.28	0.9	2.5
Endrin	µg/kg	wet	6	0				0.1	1.9	8.7
Endrin aldehyde	µg/kg	wet	6	1	0.6	0.6	0.6	0.18	0.4	1
Endrin ketone	µg/kg	wet	6	1	0.5	0.5	0.5	0.3	1.2	4.4
γ-Chlordane	µg/kg	wet	6	4	0.72	8	31	0.15	0.6	1.1
γ-Hexachlorocyclohexane	µg/kg	wet	6	2	1.8	2	2.1	0.29	0.6	1.2
Heptachlor	µg/kg	wet	6	0				0.46	0.6	1
Heptachlor epoxide	µg/kg	wet	6	2	0.5	0.64	0.77	0.26	2.3	7
Methoxychlor	µg/kg	wet	6	1	9.4	9.4	9.4	0.28	0.9	3.1
Toxaphene	µg/kg	wet	6	0				29	70	230
Aroclor® 1016	µg/kg	wet	6	0				2	2.1	2.1
Aroclor® 1221	µg/kg	wet	6	0				3.1	3.2	3.2
Aroclor® 1232	µg/kg	wet	6	0				2	2.1	2.1
Aroclor® 1242	µg/kg	wet	6	0				3.5	3.6	3.6
Aroclor® 1248	µg/kg	wet	6	1	700	700	700	0.77	0.77	0.77
Aroclor® 1254	µg/kg	wet	6	6	9.2	130	660			
Aroclor® 1260	µg/kg	wet	6	0				4.7	4.8	4.8
PCBs	µg/kg	wet	6	6	9.2	200	1,400			

Note: PCB - polychlorinated biphenyl
Marsh vegetation samples contained live tuberous roots and basal stems of *Phragmites* .

Table D-27. 2004 inorganic analyte summary statistics for marsh vegetation—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Aluminum	mg/kg	wet	6	6	114	395	646			
Antimony	mg/kg	wet	6	6	0.25	0.54	0.91			
Arsenic	mg/kg	wet	6	6	1.1	5	13.3			
Barium	mg/kg	wet	6	6	1.7	3.9	8.6			
Beryllium	mg/kg	wet	6	6	0.014	0.042	0.068			
Cadmium	mg/kg	wet	6	6	0.025	0.29	0.63			
Chromium	mg/kg	wet	6	6	2.9	9.2	31.5			
Cobalt	mg/kg	wet	6	6	0.24	1.1	2.3			
Copper	mg/kg	wet	6	6	9.9	43.3	91.4			
Iron	mg/kg	wet	6	6	1,390	2,140	3,990			
Lead	mg/kg	wet	6	6	2.4	9	20.1			
Manganese	mg/kg	wet	6	6	22.4	43.7	71.4			
Mercury	mg/kg	wet	6	6	0.079	0.6	1.6			
Nickel	mg/kg	wet	6	6	1.2	4.2	6.79			
Selenium	mg/kg	wet	6	6	0.041	0.12	0.39			
Silver	mg/kg	wet	6	6	0.51	1.78	4.39			
Thallium	mg/kg	wet	6	6	0.0078	0.01	0.015			
Vanadium	mg/kg	wet	6	6	0.48	2	3.8			
Zinc	mg/kg	wet	6	6	13.3	22	32.3			
Calcium	mg/kg	wet	6	6	137	303	458			
Magnesium	mg/kg	wet	6	6	128	269	393			
Potassium	mg/kg	wet	6	6	1,020	2,100	4,390			
Sodium	mg/kg	wet	6	6	87.6	460	1,190			

Note: Marsh vegetation samples contained live tuberous roots and basal stems of *Phragmites*.

Table D-28. 2004 conventional parameter summary statistics for marsh vegetation—Site

Analyte	Concentration Units	Measurement Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Total solids (dry wt. as percent of wet wt. or volume)	%	wet	6	6	33.8	42.3	52.6			

Note: Marsh vegetation samples contained live tuberous roots and basal stems of *Phragmites* .

Table D-29. 2004 semivolatile organic compound summary statistics for marsh vegetation—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
2,4,5-Trichlorophenol	µg/kg	wet	1	0				11	11	11
2,4,6-Trichlorophenol	µg/kg	wet	1	0				8.8	8.8	8.8
2,4-Dichlorophenol	µg/kg	wet	1	0				12	12	12
2,4-Dimethylphenol	µg/kg	wet	1	0				13	13	13
2,4-Dinitrophenol	µg/kg	wet	1	0				23	23	23
2,4-Dinitrotoluene	µg/kg	wet	1	0				8.5	8.5	8.5
2,6-Dinitrotoluene	µg/kg	wet	1	0				7	7	7
2-Chloronaphthalene	µg/kg	wet	1	0				5.9	5.9	5.9
2-Chlorophenol	µg/kg	wet	1	0				11	11	11
2-Methyl-4,6-dinitrophenol	µg/kg	wet	1	0				15	15	15
2-Methylnaphthalene	µg/kg	wet	1	0				1.5	1.5	1.5
2-Methylphenol	µg/kg	wet	1	0				53	53	53
2-Nitroaniline	µg/kg	wet	1	0				26	26	26
2-Nitrophenol	µg/kg	wet	1	0				15	15	15
3,3'-Dichlorobenzidine	µg/kg	wet	1	0				780	780	780
3-Nitroaniline	µg/kg	wet	1	0				8.9	8.9	8.9
4-Bromophenyl ether	µg/kg	wet	1	0				5.5	5.5	5.5
4-Chloro-3-methylphenol	µg/kg	wet	1	0				72	72	72
4-Chloroaniline	µg/kg	wet	1	0				5.9	5.9	5.9
4-Chlorophenyl-phenyl ether	µg/kg	wet	1	0				4.5	4.5	4.5
4-Methylphenol	µg/kg	wet	1	0				15	15	15
4-Nitroaniline	µg/kg	wet	1	0				26	26	26
4-Nitrophenol	µg/kg	wet	1	0				7.5	7.5	7.5
Acenaphthene	µg/kg	wet	1	1	0.33	0.33	0.33			
Acenaphthylene	µg/kg	wet	1	1	0.94	0.94	0.94			
Acetophenone	µg/kg	wet	1	1	30	30	30			
Anthracene	µg/kg	wet	1	1	1.3	1.3	1.3			
Atrazine	µg/kg	wet	1	0				5.5	5.5	5.5
Benz[a]anthracene	µg/kg	wet	1	1	4.7	4.7	4.7			
Benzaldehyde	µg/kg	wet	1	0				730	730	730
Benzo[a]pyrene	µg/kg	wet	1	1	5.4	5.4	5.4			
Benzo[b]fluoranthene	µg/kg	wet	1	1	5.9	5.9	5.9			
Benzo[ghi]perylene	µg/kg	wet	1	1	4.5	4.5	4.5			
Benzo[k]fluoranthene	µg/kg	wet	1	1	6.8	6.8	6.8			
Biphenyl	µg/kg	wet	1	0				4.7	4.7	4.7
Bis[2-chloroethoxy]methane	µg/kg	wet	1	0				5	5	5
Bis[2-chloroethyl]ether	µg/kg	wet	1	0				8.7	8.7	8.7
Bis[2-chloroisopropyl]ether	µg/kg	wet	1	0				11	11	11

Table D-29. (cont.)

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Bis[2-Ethylhexyl]phthalate	µg/kg	wet	1	1	90	90	90			
Butylbenzyl phthalate	µg/kg	wet	1	0				14	14	14
Caprolactam	µg/kg	wet	1	0				13	13	13
Carbazole	µg/kg	wet	1	0				33	33	33
Chrysene	µg/kg	wet	1	1	6.5	6.5	6.5			
Dibenz[a,h]anthracene	µg/kg	wet	1	1	1.9	1.9	1.9			
Dibenzofuran	µg/kg	wet	1	0				0.53	0.53	0.53
Diethyl phthalate	µg/kg	wet	1	0				9.4	9.4	9.4
Dimethyl phthalate	µg/kg	wet	1	0				5.1	5.1	5.1
Di-*n*-butyl phthalate	µg/kg	wet	1	0				140	140	140
Di-*n*-octyl phthalate	µg/kg	wet	1	0				13	13	13
Fluoranthene	µg/kg	wet	1	1	12	12	12			
Fluorene	µg/kg	wet	1	0				0.54	0.54	0.54
Hexachlorobenzene	µg/kg	wet	1	0				5.9	5.9	5.9
Hexachlorobutadiene	µg/kg	wet	1	0				8.5	8.5	8.5
Hexachlorocyclopentadiene	µg/kg	wet	1	0				5,000	5,000	5,000
Hexachloroethane	µg/kg	wet	1	0				8.5	8.5	8.5
Indeno[1,2,3-cd]pyrene	µg/kg	wet	1	1	4.7	4.7	4.7			
Isophorone	µg/kg	wet	1	0				5.8	5.8	5.8
Naphthalene	µg/kg	wet	1	0				5.6	5.6	5.6
Nitrobenzene	µg/kg	wet	1	0				10	10	10
N-nitroso-di-*n*-propylamine	µg/kg	wet	1	0				8.2	8.2	8.2
N-nitrosodiphenylamine	µg/kg	wet	1	0				9.5	9.5	9.5
Pentachlorophenol	µg/kg	wet	1	0				31	31	31
Phenanthrene	µg/kg	wet	1	1	5.5	5.5	5.5			
Phenol	µg/kg	wet	1	0				17	17	17
Pyrene	µg/kg	wet	1	1	10	10	10			
Total PAHs	µg/kg	wet	1	1	72	72	72			

Note: PAH - polycyclic aromatic hydrocarbon
Marsh vegetation samples contained live tuberous roots and basal stems of *Phragmites*.

Table D-30. 2004 pesticide/PCB summary statistics for marsh vegetation—Reference

Analyte	Concentration Units	Measurement Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
4,4'-DDD	µg/kg	wet	1	0				2.2	2.2	2.2
4,4'-DDE	µg/kg	wet	1	0				0.12	0.12	0.12
4,4'-DDT	µg/kg	wet	1	1	2.2	2.2	2.2			
Aldrin	µg/kg	wet	1	1	1.8	1.8	1.8			
α-Chlordane	µg/kg	wet	1	1	0.85	0.85	0.85			
α-Endosulfan	µg/kg	wet	1	1	2.4	2.4	2.4			
α-Hexachlorocyclohexane	µg/kg	wet	1	0				0.42	0.42	0.42
β-Endosulfan	µg/kg	wet	1	0				0.35	0.35	0.35
β-Hexachlorocyclohexane	µg/kg	wet	1	0				1	1	1
δ-Hexachlorocyclohexane	µg/kg	wet	1	0				0.34	0.34	0.34
Dieldrin	µg/kg	wet	1	0				0.57	0.57	0.57
Endosulfan sulfate	µg/kg	wet	1	0				1	1	1
Endrin	µg/kg	wet	1	0				1	1	1
Endrin aldehyde	µg/kg	wet	1	0				0.17	0.17	0.17
Endrin ketone	µg/kg	wet	1	0				0.29	0.29	0.29
γ-Chlordane	µg/kg	wet	1	1	1.1	1.1	1.1			
γ-Hexachlorocyclohexane	µg/kg	wet	1	1	1.4	1.4	1.4			
Heptachlor	µg/kg	wet	1	0				0.45	0.45	0.45
Heptachlor epoxide	µg/kg	wet	1	0				1	1	1
Methoxychlor	µg/kg	wet	1	0				1	1	1
Toxaphene	µg/kg	wet	1	0				63	63	63
Aroclor® 1016	µg/kg	wet	1	0				2	2	2
Aroclor® 1221	µg/kg	wet	1	0				3.1	3.1	3.1
Aroclor® 1232	µg/kg	wet	1	0				2	2	2
Aroclor® 1242	µg/kg	wet	1	0				3.5	3.5	3.5
Aroclor® 1248	µg/kg	wet	1	0				0.76	0.76	0.76
Aroclor® 1254	µg/kg	wet	1	1	16	16	16			
Aroclor® 1260	µg/kg	wet	1	0				4.7	4.7	4.7
PCBs	µg/kg	wet	1	1	16	16	16			

Note: PCB - polychlorinated biphenyl
Marsh vegetation samples contained live tuberous roots and basal stems of *Phragmites*.

Table D-31. 2004 inorganic analyte summary statistics for marsh vegetation—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Aluminum	mg/kg	wet	1	1	337	337	337			
Antimony	mg/kg	wet	1	1	0.22	0.22	0.22			
Arsenic	mg/kg	wet	1	1	2.1	2.1	2.1			
Barium	mg/kg	wet	1	1	3.6	3.6	3.6			
Beryllium	mg/kg	wet	1	1	0.047	0.047	0.047			
Cadmium	mg/kg	wet	1	1	0.13	0.13	0.13			
Chromium	mg/kg	wet	1	1	3.2	3.2	3.2			
Cobalt	mg/kg	wet	1	1	0.64	0.64	0.64			
Copper	mg/kg	wet	1	1	12.2	12.2	12.2			
Iron	mg/kg	wet	1	1	1,090	1,090	1,090			
Lead	mg/kg	wet	1	1	8.71	8.71	8.71			
Manganese	mg/kg	wet	1	1	83.8	83.8	83.8			
Mercury	mg/kg	wet	1	1	0.045	0.045	0.045			
Nickel	mg/kg	wet	1	1	2.2	2.2	2.2			
Selenium	mg/kg	wet	1	1	0.093	0.093	0.093			
Silver	mg/kg	wet	1	1	0.15	0.15	0.15			
Thallium	mg/kg	wet	1	1	0.013	0.013	0.013			
Vanadium	mg/kg	wet	1	1	2.8	2.8	2.8			
Zinc	mg/kg	wet	1	1	16.2	16.2	16.2			
Calcium	mg/kg	wet	1	1	313	313	313			
Magnesium	mg/kg	wet	1	1	204	204	204			
Potassium	mg/kg	wet	1	1	2,730	2,730	2,730			
Sodium	mg/kg	wet	1	1	105	105	105			

Note: Marsh vegetation samples contained live tuberous roots and basal stems of *Phragmites* .

Table D-32. 2004 conventional parameter summary statistics for marsh vegetation—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Total solids (dry wt. as percent of wet wt. or volume)	%	wet	1	1	40.5	40.5	40.5			

Note: Marsh vegetation samples contained live tuberous roots and basal stems of *Phragmites* .

Table D-33. 2004 pesticide/PCB summary statistics for marsh insects—Site

Analyte	Concentration Units	Measurement Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
4,4'-DDD	µg/kg	wet	1	0				1.1	1.1	1.1
4,4'-DDE	µg/kg	wet	1	0				1.1	1.1	1.1
4,4'-DDT	µg/kg	wet	1	1	4.1	4.1	4.1			
Aldrin	µg/kg	wet	1	0				0.21	0.21	0.21
α-Chlordane	µg/kg	wet	1	1	0.89	0.89	0.89			
α-Endosulfan	µg/kg	wet	1	0				1.1	1.1	1.1
α-Hexachlorocyclohexane	µg/kg	wet	1	0				0.17	0.17	0.17
β-Endosulfan	µg/kg	wet	1	0				2.6	2.6	2.6
β-Hexachlorocyclohexane	µg/kg	wet	1	0				0.22	0.22	0.22
δ-Hexachlorocyclohexane	µg/kg	wet	1	0				0.35	0.35	0.35
Dieldrin	µg/kg	wet	1	1	1.4	1.4	1.4			
Endosulfan sulfate	µg/kg	wet	1	0				1.1	1.1	1.1
Endrin	µg/kg	wet	1	0				6.5	6.5	6.5
Endrin aldehyde	µg/kg	wet	1	0				0.52	0.52	0.52
Endrin ketone	µg/kg	wet	1	0				1.3	1.3	1.3
γ-Chlordane	µg/kg	wet	1	1	3.8	3.8	3.8			
γ-Hexachlorocyclohexane	µg/kg	wet	1	0				0.29	0.29	0.29
Heptachlor	µg/kg	wet	1	1	0.86	0.86	0.86			
Heptachlor epoxide	µg/kg	wet	1	1	2	2	2			
Methoxychlor	µg/kg	wet	1	0				0.28	0.28	0.28
Toxaphene	µg/kg	wet	1	0				47	47	47
Aroclor® 1016	µg/kg	wet	1	0				2.1	2.1	2.1
Aroclor® 1221	µg/kg	wet	1	0				3.2	3.2	3.2
Aroclor® 1232	µg/kg	wet	1	0				2.1	2.1	2.1
Aroclor® 1242	µg/kg	wet	1	0				3.6	3.6	3.6
Aroclor® 1248	µg/kg	wet	1	0				0.78	0.78	0.78
Aroclor® 1254	µg/kg	wet	1	1	75	75	75			
Aroclor® 1260	µg/kg	wet	1	0				4.9	4.9	4.9
PCBs	µg/kg	wet	1	1	75	75	75			

Note: PCB - polychlorinated biphenyl
Analyses were conducted on whole body composite samples.

Table D-34. 2004 inorganic analyte summary statistics for marsh insects—Site

Analyte	Concentration Units	Measurement Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Aluminum	mg/kg	wet	1	1	89.9	89.9	89.9			
Antimony	mg/kg	wet	1	1	0.022	0.022	0.022			
Arsenic	mg/kg	wet	1	1	0.59	0.59	0.59			
Barium	mg/kg	wet	1	1	1.2	1.2	1.2			
Beryllium	mg/kg	wet	1	1	0.0028	0.0028	0.0028			
Cadmium	mg/kg	wet	1	1	0.91	0.91	0.91			
Chromium	mg/kg	wet	1	1	0.89	0.89	0.89			
Cobalt	mg/kg	wet	1	1	0.093	0.093	0.093			
Copper	mg/kg	wet	1	1	41.9	41.9	41.9			
Iron	mg/kg	wet	1	1	167	167	167			
Lead	mg/kg	wet	1	1	0.74	0.74	0.74			
Manganese	mg/kg	wet	1	1	11.9	11.9	11.9			
Mercury	mg/kg	wet	1	1	0.047	0.047	0.047			
Nickel	mg/kg	wet	1	1	0.72	0.72	0.72			
Selenium	mg/kg	wet	1	1	0.2	0.2	0.2			
Silver	mg/kg	wet	1	1	0.53	0.53	0.53			
Thallium	mg/kg	wet	1	1	0.0026	0.0026	0.0026			
Vanadium	mg/kg	wet	1	1	0.24	0.24	0.24			
Zinc	mg/kg	wet	1	1	55.4	55.4	55.4			
Calcium	mg/kg	wet	1	1	1,870	1,870	1,870			
Magnesium	mg/kg	wet	1	1	342	342	342			
Potassium	mg/kg	wet	1	1	2,610	2,610	2,610			
Sodium	mg/kg	wet	1	1	771	771	771			

Note: Analyses were conducted on whole body composite samples.

Table D-35. 2004 conventional parameter summary statistics for marsh insects—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Lipid	%	wet	1	1	3.6	3.6	3.6			
Total solids (dry wt. as percent of wet wt. or volume)	%	wet	1	1	28.4	28.4	28.4			

Note: Analyses were conducted on whole body composite samples.

Table D-36. 2004 pesticide/PCB summary statistics for marsh insects—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
4,4'-DDD	µg/kg	wet	1	0				4.7	4.7	4.7
4,4'-DDE	µg/kg	wet	1	0				2.1	2.1	2.1
4,4'-DDT	µg/kg	wet	1	0				2.4	2.4	2.4
Aldrin	µg/kg	wet	1	0				0.41	0.41	0.41
α-Chlordane	µg/kg	wet	1	1	1	1	1			
α-Endosulfan	µg/kg	wet	1	0				2.1	2.1	2.1
α-Hexachlorocyclohexane	µg/kg	wet	1	0				0.33	0.33	0.33
β-Endosulfan	µg/kg	wet	1	0				2.1	2.1	2.1
β-Hexachlorocyclohexane	µg/kg	wet	1	0				0.43	0.43	0.43
δ-Hexachlorocyclohexane	µg/kg	wet	1	0				0.7	0.7	0.7
Dieldrin	µg/kg	wet	1	0				2.1	2.1	2.1
Endosulfan sulfate	µg/kg	wet	1	0				0.67	0.67	0.67
Endrin	µg/kg	wet	1	0				2.1	2.1	2.1
Endrin aldehyde	µg/kg	wet	1	0				1.6	1.6	1.6
Endrin ketone	µg/kg	wet	1	0				1.9	1.9	1.9
γ-Chlordane	µg/kg	wet	1	0				2.1	2.1	2.1
γ-Hexachlorocyclohexane	µg/kg	wet	1	0				0.57	0.57	0.57
Heptachlor	µg/kg	wet	1	0				0.92	0.92	0.92
Heptachlor epoxide	µg/kg	wet	1	0				2.1	2.1	2.1
Methoxychlor	µg/kg	wet	1	0				2.1	2.1	2.1
Toxaphene	µg/kg	wet	1	0				230	230	230
Aroclor® 1016	µg/kg	wet	1	0				4.1	4.1	4.1
Aroclor® 1221	µg/kg	wet	1	0				6.4	6.4	6.4
Aroclor® 1232	µg/kg	wet	1	0				4.1	4.1	4.1
Aroclor® 1242	µg/kg	wet	1	0				7.2	7.2	7.2
Aroclor® 1248	µg/kg	wet	1	0				1.6	1.6	1.6
Aroclor® 1254	µg/kg	wet	1	0				3.1	3.1	3.1
Aroclor® 1260	µg/kg	wet	1	0				9.6	9.6	9.6
PCBs	µg/kg	wet	1	0				9.6	9.6	9.6

Note: PCB - polychlorinated biphenyl
Analyses were conducted on whole body composite samples.

Table D-37. 2004 inorganic analyte summary statistics for marsh insects—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Aluminum	mg/kg	wet	1	1	17.3	17.3	17.3			
Antimony	mg/kg	wet	1	1	0.0062	0.0062	0.0062			
Arsenic	mg/kg	wet	1	1	0.065	0.065	0.065			
Barium	mg/kg	wet	1	1	1.4	1.4	1.4			
Beryllium	mg/kg	wet	1	0				0.0022	0.0022	0.0022
Cadmium	mg/kg	wet	1	1	0.34	0.34	0.34			
Chromium	mg/kg	wet	1	1	0.4	0.4	0.4			
Cobalt	mg/kg	wet	1	1	0.027	0.027	0.027			
Copper	mg/kg	wet	1	1	22.6	22.6	22.6			
Iron	mg/kg	wet	1	1	41.9	41.9	41.9			
Lead	mg/kg	wet	1	1	0.19	0.19	0.19			
Manganese	mg/kg	wet	1	1	9.39	9.39	9.39			
Mercury	mg/kg	wet	1	1	0.019	0.019	0.019			
Nickel	mg/kg	wet	1	1	0.24	0.24	0.24			
Selenium	mg/kg	wet	1	1	0.21	0.21	0.21			
Silver	mg/kg	wet	1	1	0.078	0.078	0.078			
Thallium	mg/kg	wet	1	1	0.0009	0.0009	0.0009			
Vanadium	mg/kg	wet	1	1	0.093	0.093	0.093			
Zinc	mg/kg	wet	1	1	50.8	50.8	50.8			
Calcium	mg/kg	wet	1	1	1,930	1,930	1,930			
Magnesium	mg/kg	wet	1	1	366	366	366			
Potassium	mg/kg	wet	1	1	2,890	2,890	2,890			
Sodium	mg/kg	wet	1	1	880	880	880			

Note: Analyses were conducted on whole body composite samples.

Table D-38. 2004 conventional parameter summary statistics for marsh insects—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Lipid	%	wet	1	1	3.8	3.8	3.8			
Total solids (dry wt. as percent of wet wt. or volume)	%	wet	1	1	31	31	31			

Note: Analyses were conducted on whole body composite samples.

Table D-39. 2004 semivolatile organic compound summary statistics for small mammals—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
2,4,5-Trichlorophenol	µg/kg	wet	3	0				11	11	11
2,4,6-Trichlorophenol	µg/kg	wet	3	0				8.8	8.8	8.8
2,4-Dichlorophenol	µg/kg	wet	3	0				12	12	12
2,4-Dimethylphenol	µg/kg	wet	3	0				13	13	13
2,4-Dinitrophenol	µg/kg	wet	3	0				23	23	23
2,4-Dinitrotoluene	µg/kg	wet	3	0				8.5	8.5	8.5
2,6-Dinitrotoluene	µg/kg	wet	3	0				7	7	7
2-Chloronaphthalene	µg/kg	wet	3	0				5.9	5.9	5.9
2-Chlorophenol	µg/kg	wet	3	0				11	11	11
2-Methyl-4,6-dinitrophenol	µg/kg	wet	3	0				15	15	15
2-Methylnaphthalene	µg/kg	wet	3	0				0.46	0.68	0.81
2-Methylphenol	µg/kg	wet	3	0				53	53	53
2-Nitroaniline	µg/kg	wet	3	0				26	26	26
2-Nitrophenol	µg/kg	wet	3	0				15	15	15
3,3'-Dichlorobenzidine	µg/kg	wet	3	0				780	780	780
3-Nitroaniline	µg/kg	wet	3	0				8.9	8.9	8.9
4-Bromophenyl ether	µg/kg	wet	3	0				5.5	5.5	5.5
4-Chloro-3-methylphenol	µg/kg	wet	3	0				72	81	98
4-Chloroaniline	µg/kg	wet	3	0				5.9	5.9	5.9
4-Chlorophenyl-phenyl ether	µg/kg	wet	3	0				4.5	4.5	4.5
4-Methylphenol	µg/kg	wet	3	2	31	130	230	15	15	15
4-Nitroaniline	µg/kg	wet	3	0				26	26	26
4-Nitrophenol	µg/kg	wet	3	0				7.5	7.5	7.5
Acenaphthene	µg/kg	wet	3	2	0.11	0.12	0.12	0.078	0.078	0.078
Acenaphthylene	µg/kg	wet	3	0				0.17	0.19	0.24
Acetophenone	µg/kg	wet	3	1	20	20	20	20	20	20
Anthracene	µg/kg	wet	3	0				0.059	0.13	0.18
Atrazine	µg/kg	wet	3	0				5.5	570	980
Benz[a]anthracene	µg/kg	wet	3	0				0.057	0.057	0.058
Benzaldehyde	µg/kg	wet	3	0				730	730	730
Benzo[a]pyrene	µg/kg	wet	3	0				0.081	0.081	0.081
Benzo[b]fluoranthene	µg/kg	wet	3	0				0.048	0.048	0.048
Benzo[ghi]perylene	µg/kg	wet	3	1	0.14	0.14	0.14	0.11	0.11	0.11
Benzo[k]fluoranthene	µg/kg	wet	3	0				0.086	0.086	0.086
Biphenyl	µg/kg	wet	3	0				4.7	4.7	4.7
Bis[2-chloroethoxy]methane	µg/kg	wet	3	0				5	5	5
Bis[2-chloroethyl]ether	µg/kg	wet	3	0				8.7	8.7	8.7
Bis[2-chloroisopropyl]ether	µg/kg	wet	3	0				11	11	11

Table D-39. (cont.)

Analyte	Concentration Units	Measurement Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Bis[2-Ethylhexyl]phthalate	µg/kg	wet	3	0				53	53	53
Butylbenzyl phthalate	µg/kg	wet	3	0				14	14	14
Caprolactam	µg/kg	wet	3	0				13	13	13
Carbazole	µg/kg	wet	3	0				33	33	33
Chrysene	µg/kg	wet	3	0				0.085	0.085	0.085
Dibenz[a,h]anthracene	µg/kg	wet	3	0				0.084	0.084	0.084
Dibenzofuran	µg/kg	wet	3	0				0.16	0.22	0.28
Diethyl phthalate	µg/kg	wet	3	0				9.4	9.4	9.4
Dimethyl phthalate	µg/kg	wet	3	0				5.1	5.1	5.1
Di-*n* -butyl phthalate	µg/kg	wet	3	0				16	80	210
Di-*n* -octyl phthalate	µg/kg	wet	3	0				13	13	13
Fluoranthene	µg/kg	wet	3	0				0.056	0.056	0.056
Fluorene	µg/kg	wet	3	0				0.057	0.13	0.28
Hexachlorobenzene	µg/kg	wet	3	0				5.9	5.9	5.9
Hexachlorobutadiene	µg/kg	wet	3	0				8.5	8.5	8.5
Hexachlorocyclopentadiene	µg/kg	wet	3	0				5,000	5,000	5,000
Hexachloroethane	µg/kg	wet	3	0				8.5	8.5	8.5
Indeno[1,2,3-cd]pyrene	µg/kg	wet	3	0				0.077	0.078	0.078
Isophorone	µg/kg	wet	3	0				5.8	5.8	5.8
Naphthalene	µg/kg	wet	3	0				2.2	3.9	5.5
Nitrobenzene	µg/kg	wet	3	0				10	10	10
N -nitroso-di-*n* -propylamine	µg/kg	wet	3	0				8.2	8.2	8.2
N -nitrosodiphenylamine	µg/kg	wet	3	0				9.5	9.5	9.5
Pentachlorophenol	µg/kg	wet	3	0				31	31	31
Phenanthrene	µg/kg	wet	3	0				0.55	0.62	0.66
Phenol	µg/kg	wet	3	3	310	530	730			
Pyrene	µg/kg	wet	3	0				0.074	0.25	0.36
Total PAHs	µg/kg	wet	3	2	3.6	3.9	4.2	4.7	4.7	4.7

Note: PAH - polycyclic aromatic hydrocarbon

Analyses were conducted on whole body composite samples, with the exception of Sample ID SM0003, an individual mammal from Station 11A.

Table D-40. 2004 pesticide/PCB summary statistics for small mammals—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
4,4'-DDD	µg/kg	wet	5	0				0.13	0.3	1
4,4'-DDE	µg/kg	wet	5	2	0.47	0.7	0.93	0.51	0.9	1.3
4,4'-DDT	µg/kg	wet	5	5	1.3	4	13			
Aldrin	µg/kg	wet	5	0				0.2	0.24	0.41
α-Chlordane	µg/kg	wet	5	0				0.36	0.52	0.73
α-Endosulfan	µg/kg	wet	5	1	0.42	0.42	0.42	0.13	0.31	0.59
α-Hexachlorocyclohexane	µg/kg	wet	5	0				0.16	0.28	0.6
β-Endosulfan	µg/kg	wet	5	0				0.35	1.3	4.7
β-Hexachlorocyclohexane	µg/kg	wet	5	0				0.21	0.25	0.43
δ-Hexachlorocyclohexane	µg/kg	wet	5	0				0.34	0.5	0.69
Dieldrin	µg/kg	wet	5	0				1	7	28
Endosulfan sulfate	µg/kg	wet	5	0				0.27	0.33	0.55
Endrin	µg/kg	wet	5	0				0.98	2.3	6.3
Endrin aldehyde	µg/kg	wet	5	0				0.17	0.5	1
Endrin ketone	µg/kg	wet	5	0				0.29	0.49	0.98
γ-Chlordane	µg/kg	wet	5	0				0.14	0.7	1.3
γ-Hexachlorocyclohexane	µg/kg	wet	5	0				0.28	0.34	0.57
Heptachlor	µg/kg	wet	5	0				0.45	0.54	0.92
Heptachlor epoxide	µg/kg	wet	5	3	0.29	0.7	1.1	0.64	0.9	1.2
Methoxychlor	µg/kg	wet	5	0				0.53	1.1	2.1
Toxaphene	µg/kg	wet	5	0				21	50	110
Aroclor® 1016	µg/kg	wet	5	0				2	2.4	4.1
Aroclor® 1221	µg/kg	wet	5	0				3.1	3.7	6.3
Aroclor® 1232	µg/kg	wet	5	0				2	2.4	4.1
Aroclor® 1242	µg/kg	wet	5	0				3.5	4.2	7.1
Aroclor® 1248	µg/kg	wet	5	0				0.76	0.9	1.6
Aroclor® 1254	µg/kg	wet	5	0				3.2	12	29
Aroclor® 1260	µg/kg	wet	5	5	11	40	110			
PCBs	µg/kg	wet	5	5	11	40	110			

Note: PCB - polychlorinated biphenyl
Analyses were conducted on whole body composite samples, with the exception of Sample ID SM0003, an individual mammal from Station 11A.

Table D-41. 2004 inorganic analyte summary statistics for small mammals—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Aluminum	mg/kg	wet	5	5	122	510	1,230			
Antimony	mg/kg	wet	5	5	0.0026	0.0044	0.0069			
Arsenic	mg/kg	wet	5	5	0.023	0.1	0.27			
Barium	mg/kg	wet	5	5	1.2	2.2	2.6			
Beryllium	mg/kg	wet	5	0				0.002	0.002	0.0021
Cadmium	mg/kg	wet	5	5	0.0075	0.019	0.031			
Chromium	mg/kg	wet	5	5	0.21	0.33	0.44			
Cobalt	mg/kg	wet	5	5	0.033	0.051	0.083			
Copper	mg/kg	wet	5	5	2.7	4.8	9.72			
Iron	mg/kg	wet	5	5	64.8	75.8	83.2			
Lead	mg/kg	wet	5	5	0.18	0.32	0.75			
Manganese	mg/kg	wet	5	5	4.38	8.4	15.5			
Mercury	mg/kg	wet	5	5	0.0047	0.011	0.019			
Nickel	mg/kg	wet	5	5	0.46	0.8	1.6			
Selenium	mg/kg	wet	5	5	0.19	0.25	0.38			
Silver	mg/kg	wet	5	5	0.0041	0.013	0.042			
Thallium	mg/kg	wet	5	5	0.0006	0.0013	0.0032			
Vanadium	mg/kg	wet	5	5	0.13	0.2	0.31			
Zinc	mg/kg	wet	5	5	24.1	26.2	29.8			
Calcium	mg/kg	wet	5	5	6,100	10,700	16,400			
Magnesium	mg/kg	wet	5	5	344	442	502			
Potassium	mg/kg	wet	5	5	2,980	3,290	3,440			
Sodium	mg/kg	wet	5	5	1,330	1,370	1,430			

Note: Analyses were conducted on whole body composite samples, with the exception of Sample ID SM0003, an individual mammal from Station 11A.

Table D-42. 2004 conventional parameter summary statistics for small mammals—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Lipid	%	wet	5	5	3.5	3.9	4.4			
Total solids (dry wt. as percent of wet wt. or volume)	%	wet	5	5	28.9	29.3	29.9			

Note: Analyses were conducted on whole body composite samples, with the exception of Sample ID SM0003, an individual mammal from Station 11A.

Table D-43. 2004 semivolatile organic compound summary statistics for small mammals—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
2,4,5-Trichlorophenol	µg/kg	wet	1	0				11	11	11
2,4,6-Trichlorophenol	µg/kg	wet	1	0				8.8	8.8	8.8
2,4-Dichlorophenol	µg/kg	wet	1	0				12	12	12
2,4-Dimethylphenol	µg/kg	wet	1	0				13	13	13
2,4-Dinitrophenol	µg/kg	wet	1	0				23	23	23
2,4-Dinitrotoluene	µg/kg	wet	1	0				8.5	8.5	8.5
2,6-Dinitrotoluene	µg/kg	wet	1	0				7	7	7
2-Chloronaphthalene	µg/kg	wet	1	0				5.9	5.9	5.9
2-Chlorophenol	µg/kg	wet	1	0				11	11	11
2-Methyl-4,6-dinitrophenol	µg/kg	wet	1	0				15	15	15
2-Methylnaphthalene	µg/kg	wet	1	0				0.93	0.93	0.93
2-Methylphenol	µg/kg	wet	1	0				53	53	53
2-Nitroaniline	µg/kg	wet	1	0				26	26	26
2-Nitrophenol	µg/kg	wet	1	0				15	15	15
3,3'-Dichlorobenzidine	µg/kg	wet	1	0				780	780	780
3-Nitroaniline	µg/kg	wet	1	0				8.9	8.9	8.9
4-Bromophenyl ether	µg/kg	wet	1	0				5.5	5.5	5.5
4-Chloro-3-methylphenol	µg/kg	wet	1	0				100	100	100
4-Chloroaniline	µg/kg	wet	1	0				5.9	5.9	5.9
4-Chlorophenyl-phenyl ether	µg/kg	wet	1	0				4.5	4.5	4.5
4-Methylphenol	µg/kg	wet	1	1	190	190	190			
4-Nitroaniline	µg/kg	wet	1	0				26	26	26
4-Nitrophenol	µg/kg	wet	1	0				7.5	7.5	7.5
Acenaphthene	µg/kg	wet	1	1	0.16	0.16	0.16			
Acenaphthylene	µg/kg	wet	1	0				0.15	0.15	0.15
Acetophenone	µg/kg	wet	1	1	20	20	20			
Anthracene	µg/kg	wet	1	0				0.36	0.36	0.36
Atrazine	µg/kg	wet	1	0				600	600	600
Benz[a]anthracene	µg/kg	wet	1	1	0.69	0.69	0.69			
Benzaldehyde	µg/kg	wet	1	0				730	730	730
Benzo[a]pyrene	µg/kg	wet	1	0				0.081	0.081	0.081
Benzo[b]fluoranthene	µg/kg	wet	1	0				0.048	0.048	0.048
Benzo[ghi]perylene	µg/kg	wet	1	1	0.24	0.24	0.24			
Benzo[k]fluoranthene	µg/kg	wet	1	0				0.086	0.086	0.086
Biphenyl	µg/kg	wet	1	0				4.7	4.7	4.7
Bis[2-chloroethoxy]methane	µg/kg	wet	1	0				5	5	5
Bis[2-chloroethyl]ether	µg/kg	wet	1	0				8.7	8.7	8.7
Bis[2-chloroisopropyl]ether	µg/kg	wet	1	0				11	11	11

Table D-43. (cont.)

Analyte	Concen- tration Units	Measure- ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Bis[2-Ethylhexyl]phthalate	µg/kg	wet	1	0				460	460	460
Butylbenzyl phthalate	µg/kg	wet	1	0				14	14	14
Caprolactam	µg/kg	wet	1	0				13	13	13
Carbazole	µg/kg	wet	1	0				33	33	33
Chrysene	µg/kg	wet	1	1	0.49	0.49	0.49			
Dibenz[a,h]anthracene	µg/kg	wet	1	0				0.084	0.084	0.084
Dibenzofuran	µg/kg	wet	1	0				0.29	0.29	0.29
Diethyl phthalate	µg/kg	wet	1	0				9.4	9.4	9.4
Dimethyl phthalate	µg/kg	wet	1	0				5.1	5.1	5.1
Di-*n* -butyl phthalate	µg/kg	wet	1	0				16	16	16
Di-*n* -octyl phthalate	µg/kg	wet	1	0				13	13	13
Fluoranthene	µg/kg	wet	1	1	1.4	1.4	1.4			
Fluorene	µg/kg	wet	1	0				0.32	0.32	0.32
Hexachlorobenzene	µg/kg	wet	1	1	61	61	61			
Hexachlorobutadiene	µg/kg	wet	1	0				8.5	8.5	8.5
Hexachlorocyclopentadiene	µg/kg	wet	1	0				5,000	5,000	5,000
Hexachloroethane	µg/kg	wet	1	0				8.5	8.5	8.5
Indeno[1,2,3-cd]pyrene	µg/kg	wet	1	0				0.078	0.078	0.078
Isophorone	µg/kg	wet	1	0				5.8	5.8	5.8
Naphthalene	µg/kg	wet	1	0				5.1	5.1	5.1
Nitrobenzene	µg/kg	wet	1	0				10	10	10
N -nitroso-di-*n* -propylamine	µg/kg	wet	1	0				8.2	8.2	8.2
N -nitrosodiphenylamine	µg/kg	wet	1	0				9.5	9.5	9.5
Pentachlorophenol	µg/kg	wet	1	0				31	31	31
Phenanthrene	µg/kg	wet	1	0				1.2	1.2	1.2
Phenol	µg/kg	wet	1	1	890	890	890			
Pyrene	µg/kg	wet	1	0				0.93	0.93	0.93
Total PAHs	µg/kg	wet	1	1	7.6	7.6	7.6			

Note: PAH - polycyclic aromatic hydrocarbon
Analyses were conducted on whole body composite samples.

Table D-44. 2004 pesticide/PCB summary statistics for small mammals—Reference

Analyte	Concentration Units	Measurement Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
4,4'-DDD	µg/kg	wet	1	0				1	1	1
4,4'-DDE	µg/kg	wet	1	0				0.12	0.12	0.12
4,4'-DDT	µg/kg	wet	1	1	1	1	1			
Aldrin	µg/kg	wet	1	0				0.2	0.2	0.2
α-Chlordane	µg/kg	wet	1	0				0.36	0.36	0.36
α-Endosulfan	µg/kg	wet	1	0				0.13	0.13	0.13
α-Hexachlorocyclohexane	µg/kg	wet	1	0				0.16	0.16	0.16
β-Endosulfan	µg/kg	wet	1	0				0.35	0.35	0.35
β-Hexachlorocyclohexane	µg/kg	wet	1	1	0.27	0.27	0.27			
δ-Hexachlorocyclohexane	µg/kg	wet	1	0				0.34	0.34	0.34
Dieldrin	µg/kg	wet	1	0				1	1	1
Endosulfan sulfate	µg/kg	wet	1	0				0.27	0.27	0.27
Endrin	µg/kg	wet	1	0				2	2	2
Endrin aldehyde	µg/kg	wet	1	0				0.17	0.17	0.17
Endrin ketone	µg/kg	wet	1	0				0.29	0.29	0.29
γ-Chlordane	µg/kg	wet	1	0				0.78	0.78	0.78
γ-Hexachlorocyclohexane	µg/kg	wet	1	0				0.31	0.31	0.31
Heptachlor	µg/kg	wet	1	0				0.45	0.45	0.45
Heptachlor epoxide	µg/kg	wet	1	1	0.53	0.53	0.53			
Methoxychlor	µg/kg	wet	1	0				1	1	1
Toxaphene	µg/kg	wet	1	0				51	51	51
Aroclor® 1016	µg/kg	wet	1	0				2	2	2
Aroclor® 1221	µg/kg	wet	1	0				3.1	3.1	3.1
Aroclor® 1232	µg/kg	wet	1	0				2	2	2
Aroclor® 1242	µg/kg	wet	1	0				3.5	3.5	3.5
Aroclor® 1248	µg/kg	wet	1	0				0.76	0.76	0.76
Aroclor® 1254	µg/kg	wet	1	0				1.5	1.5	1.5
Aroclor® 1260	µg/kg	wet	1	0				4.7	4.7	4.7
PCBs	µg/kg	wet	1	0				4.7	4.7	4.7

Note: PCB - polychlorinated biphenyl
Analyses were conducted on whole body composite samples.

Table D-45. 2004 inorganic analyte summary statistics for small mammals—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Aluminum	mg/kg	wet	1	1	236	236	236			
Antimony	mg/kg	wet	1	1	0.003	0.003	0.003			
Arsenic	mg/kg	wet	1	1	0.055	0.055	0.055			
Barium	mg/kg	wet	1	1	2.97	2.97	2.97			
Beryllium	mg/kg	wet	1	0				0.0019	0.0019	0.0019
Cadmium	mg/kg	wet	1	1	0.019	0.019	0.019			
Chromium	mg/kg	wet	1	1	0.33	0.33	0.33			
Cobalt	mg/kg	wet	1	1	0.032	0.032	0.032			
Copper	mg/kg	wet	1	1	3.63	3.63	3.63			
Iron	mg/kg	wet	1	1	66.6	66.6	66.6			
Lead	mg/kg	wet	1	1	0.21	0.21	0.21			
Manganese	mg/kg	wet	1	1	4.87	4.87	4.87			
Mercury	mg/kg	wet	1	1	0.0039	0.0039	0.0039			
Nickel	mg/kg	wet	1	1	0.56	0.56	0.56			
Selenium	mg/kg	wet	1	1	0.24	0.24	0.24			
Silver	mg/kg	wet	1	1	0.0041	0.0041	0.0041			
Thallium	mg/kg	wet	1	1	0.0011	0.0011	0.0011			
Vanadium	mg/kg	wet	1	1	0.12	0.12	0.12			
Zinc	mg/kg	wet	1	1	26.6	26.6	26.6			
Calcium	mg/kg	wet	1	1	8,910	8,910	8,910			
Magnesium	mg/kg	wet	1	1	415	415	415			
Potassium	mg/kg	wet	1	1	3,410	3,410	3,410			
Sodium	mg/kg	wet	1	1	1,390	1,390	1,390			

Note: Analyses were conducted on whole body composite samples.

Table D-46. 2004 conventional parameter summary statistics for small mammals—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Lipid	%	wet	1	1	3.1	3.1	3.1			
Total solids (dry wt. as percent of wet wt. or volume)	%	wet	1	1	27.5	27.5	27.5			

Note: Analyses were conducted on whole body composite samples.

Table D-47. 2004 semivolatile organic compound summary statistics for river crabs—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
2,4,5-Trichlorophenol	µg/kg	wet	3	0				22	22	22
2,4,6-Trichlorophenol	µg/kg	wet	3	0				18	18	18
2,4-Dichlorophenol	µg/kg	wet	3	0				24	24	24
2,4-Dimethylphenol	µg/kg	wet	3	0				26	26	26
2,4-Dinitrophenol	µg/kg	wet	3	0				46	46	46
2,4-Dinitrotoluene	µg/kg	wet	3	0				17	17	17
2,6-Dinitrotoluene	µg/kg	wet	3	0				14	14	14
2-Chloronaphthalene	µg/kg	wet	3	0				12	12	12
2-Chlorophenol	µg/kg	wet	3	0				22	22	22
2-Methyl-4,6-dinitrophenol	µg/kg	wet	3	0				30	30	30
2-Methylnaphthalene	µg/kg	wet	3	3	1.2	1.4	1.5			
2-Methylphenol	µg/kg	wet	3	0				110	110	110
2-Nitroaniline	µg/kg	wet	3	0				52	52	52
2-Nitrophenol	µg/kg	wet	3	0				30	30	30
3,3'-Dichlorobenzidine	µg/kg	wet	3	0				1,600	1,600	1,600
3-Nitroaniline	µg/kg	wet	3	0				18	18	18
4-Bromophenyl ether	µg/kg	wet	3	0				11	11	11
4-Chloro-3-methylphenol	µg/kg	wet	3	0				150	150	150
4-Chloroaniline	µg/kg	wet	3	0				12	12	12
4-Chlorophenyl-phenyl ether	µg/kg	wet	3	0				8.9	9	9
4-Methylphenol	µg/kg	wet	3	0				30	30	30
4-Nitroaniline	µg/kg	wet	3	0				52	52	52
4-Nitrophenol	µg/kg	wet	3	0				15	15	15
Acenaphthene	µg/kg	wet	3	3	0.37	0.45	0.59			
Acenaphthylene	µg/kg	wet	3	2	0.42	0.55	0.67	0.55	0.55	0.55
Acetophenone	µg/kg	wet	3	1	42	42	42	40	40	40
Anthracene	µg/kg	wet	3	2	0.5	0.6	0.7	0.36	0.36	0.36
Atrazine	µg/kg	wet	3	0				11	60	170
Benz[a]anthracene	µg/kg	wet	3	3	1.2	1.5	2			
Benzaldehyde	µg/kg	wet	3	0				1,500	1,500	1,500
Benzo[a]pyrene	µg/kg	wet	3	3	0.75	1	1.3			
Benzo[b]fluoranthene	µg/kg	wet	3	3	0.98	1.2	1.6			
Benzo[ghi]perylene	µg/kg	wet	3	3	0.73	0.9	1.3			
Benzo[k]fluoranthene	µg/kg	wet	3	3	0.86	1.1	1.6			
Biphenyl	µg/kg	wet	3	0				9.3	9.4	9.4
Bis[2-chloroethoxy]methane	µg/kg	wet	3	0				9.9	10	10
Bis[2-chloroethyl]ether	µg/kg	wet	3	0				18	18	18
Bis[2-chloroisopropyl]ether	µg/kg	wet	3	0				22	22	22

Table D-47. (cont.)

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Bis[2-Ethylhexyl]phthalate	µg/kg	wet	3	0				110	120	140
Butylbenzyl phthalate	µg/kg	wet	3	0				28	28	28
Caprolactam	µg/kg	wet	3	1	26	26	26	26	26	26
Carbazole	µg/kg	wet	3	0				65	66	66
Chrysene	µg/kg	wet	3	3	1.1	1.6	2.4			
Dibenz[a,h]anthracene	µg/kg	wet	3	2	0.38	0.42	0.46	0.18	0.18	0.18
Dibenzofuran	µg/kg	wet	3	0				0.35	0.37	0.4
Diethyl phthalate	µg/kg	wet	3	0				19	19	19
Dimethyl phthalate	µg/kg	wet	3	0				11	11	11
Di-*n* -butyl phthalate	µg/kg	wet	3	0				32	350	670
Di-*n* -octyl phthalate	µg/kg	wet	3	0				26	26	26
Fluoranthene	µg/kg	wet	3	3	2.1	2.1	2.1			
Fluorene	µg/kg	wet	3	1	0.37	0.37	0.37	0.43	0.46	0.48
Hexachlorobenzene	µg/kg	wet	3	0				12	12	12
Hexachlorobutadiene	µg/kg	wet	3	0				17	17	17
Hexachlorocyclopentadiene	µg/kg	wet	3	0				9,900	10,000	10,000
Hexachloroethane	µg/kg	wet	3	0				17	17	17
Indeno[1,2,3-cd]pyrene	µg/kg	wet	3	3	0.77	1	1.2			
Isophorone	µg/kg	wet	3	0				12	12	12
Naphthalene	µg/kg	wet	3	0				9.5	10	11
Nitrobenzene	µg/kg	wet	3	0				20	20	20
N -nitroso-di-*n* -propylamine	µg/kg	wet	3	0				17	17	17
N -nitrosodiphenylamine	µg/kg	wet	3	0				19	19	19
Pentachlorophenol	µg/kg	wet	3	0				62	62	62
Phenanthrene	µg/kg	wet	3	0				1.4	1.7	2
Phenol	µg/kg	wet	3	2	36	58	79	34	34	34
Pyrene	µg/kg	wet	3	3	2.2	2.2	2.2			
Total PAHs	µg/kg	wet	3	3	19	22	24			

Note: PAH - polycyclic aromatic hydrocarbon
Analyses were conducted on whole body composite samples, with the exception of Sample ID CR0005, an individual river crab from Station 10.

Table D-48. 2004 pesticide/PCB summary statistics for river crabs—Site

Analyte	Concentration Units	Measurement Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
4,4'-DDD	µg/kg	wet	5	5	4.3	10	16			
4,4'-DDE	µg/kg	wet	5	5	5.9	16	22			
4,4'-DDT	µg/kg	wet	5	5	2.8	5.3	7.4			
Aldrin	µg/kg	wet	5	0				0.21	0.43	0.67
α-Chlordane	µg/kg	wet	5	2	0.57	0.8	1.1	0.74	0.75	0.76
α-Endosulfan	µg/kg	wet	5	5	0.97	3	3.9			
α-Hexachlorocyclohexane	µg/kg	wet	5	0				0.17	0.31	0.36
β-Endosulfan	µg/kg	wet	5	0				0.36	0.66	0.74
β-Hexachlorocyclohexane	µg/kg	wet	5	0				0.22	0.7	2.1
δ-Hexachlorocyclohexane	µg/kg	wet	5	0				0.35	0.64	0.72
Dieldrin	µg/kg	wet	5	4	1.4	2.1	2.8	0.24	0.24	0.24
Endosulfan sulfate	µg/kg	wet	5	1	0.55	0.55	0.55	0.56	0.57	0.57
Endrin	µg/kg	wet	5	0				0.11	2	5.7
Endrin aldehyde	µg/kg	wet	5	2	0.56	0.57	0.58	0.36	1	2.1
Endrin ketone	µg/kg	wet	5	0				0.61	1.7	3.6
γ-Chlordane	µg/kg	wet	5	1	4.7	4.7	4.7	2.1	3.7	4.7
γ-Hexachlorocyclohexane	µg/kg	wet	5	0				0.29	0.8	2.1
Heptachlor	µg/kg	wet	5	0				0.47	0.85	0.95
Heptachlor epoxide	µg/kg	wet	5	2	3.1	3.4	3.6	0.32	1.3	1.9
Methoxychlor	µg/kg	wet	5	0				0.28	0.51	0.57
Toxaphene	µg/kg	wet	5	0				19	44	69
Aroclor® 1016	µg/kg	wet	5	0				2.1	3.8	4.2
Aroclor® 1221	µg/kg	wet	5	0				3.2	5.8	6.6
Aroclor® 1232	µg/kg	wet	5	0				2.1	3.8	4.2
Aroclor® 1242	µg/kg	wet	5	0				3.6	6.6	7.4
Aroclor® 1248	µg/kg	wet	5	0				0.78	1.4	1.6
Aroclor® 1254	µg/kg	wet	5	0				27	54	78
Aroclor® 1260	µg/kg	wet	5	5	26	56	81			
PCBs	µg/kg	wet	5	5	26	56	81			

Note: PCB - polychlorinated biphenyl
Analyses were conducted on whole body composite samples, with the exception of Sample ID CR0005, an individual river crab from Station 10.

Table D-49. 2004 dioxin and furan summary statistics for river crabs—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
2,3,7,8-Tetrachlorodibenzo-*p*-dioxin	ng/kg	wet	2	2	0.47	0.49	0.5			
1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin	ng/kg	wet	2	2	0.1	0.13	0.16			
1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin	ng/kg	wet	2	1	0.05	0.05	0.05	0.042	0.042	0.042
1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin	ng/kg	wet	2	2	0.15	0.16	0.16			
1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin	ng/kg	wet	2	0				0.042	0.058	0.074
1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin	ng/kg	wet	2	2	1.3	1.3	1.4			
Octachlorodibenzo-*p*-dioxin	ng/kg	wet	2	2	26	27	28			
2,3,7,8-Tetrachlorodibenzofuran	ng/kg	wet	2	2	1.6	2	2.5			
1,2,3,7,8-Pentachlorodibenzofuran	ng/kg	wet	2	2	0.18	0.21	0.24			
2,3,4,7,8-Pentachlorodibenzofuran	ng/kg	wet	2	2	0.18	0.26	0.35			
1,2,3,4,7,8-Hexachlorodibenzofuran	ng/kg	wet	2	0				0.21	0.23	0.25
1,2,3,6,7,8-Hexachlorodibenzofuran	ng/kg	wet	2	0				0.069	0.1	0.13
2,3,4,6,7,8-Hexachlorodibenzofuran	ng/kg	wet	2	0				0.045	0.05	0.054
1,2,3,7,8,9-Hexachlorodibenzofuran	ng/kg	wet	2	0				0.034	0.042	0.049
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ng/kg	wet	2	0				0.45	0.49	0.53
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ng/kg	wet	2	0				0.024	0.06	0.1
Octachlorodibenzofuran	ng/kg	wet	2	0				0.92	1	1
Total tetrachlorodibenzo-*p*-dioxins	ng/kg	wet	2	2	0.69	0.74	0.79			
Total pentachlorodibenzo-*p*-dioxins	ng/kg	wet	2	2	0.16	0.21	0.27			
Total hexachlorodibenzo-*p*-dioxins	ng/kg	wet	2	2	0.44	0.46	0.48			
Total heptachlorodibenzo-*p*-dioxins	ng/kg	wet	2	2	2.9	3	3.1			
Total tetrachlorodibenzofurans	ng/kg	wet	2	2	7.5	8.7	9.8			
Total pentachlorodibenzofurans	ng/kg	wet	2	2	3.5	4.5	5.5			
Total hexachlorodibenzofurans	ng/kg	wet	2	2	0.67	0.9	1.2			
Total heptachlorodibenzofurans	ng/kg	wet	2	2	0.89	0.93	0.97			

Note: Analyses were conducted on whole body composite samples, with the exception of Sample ID CR0005, an individual river crab from Station 10.

Table D-50. 2004 inorganic analyte summary statistics for river crabs—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Aluminum	mg/kg	wet	7	7	40.8	157	396			
Antimony	mg/kg	wet	7	7	0.0064	0.018	0.06			
Arsenic	mg/kg	wet	7	7	0.66	1.1	2.7			
Barium	mg/kg	wet	7	7	14.2	18.3	25.4			
Beryllium	mg/kg	wet	7	5	0.0033	0.006	0.013	0.002	0.0021	0.0022
Cadmium	mg/kg	wet	7	7	0.018	0.026	0.034			
Chromium	mg/kg	wet	7	7	0.17	0.44	0.95			
Cobalt	mg/kg	wet	7	7	0.082	0.23	0.61			
Copper	mg/kg	wet	7	7	7.87	15	22.7			
Iron	mg/kg	wet	7	7	84.3	307	768			
Lead	mg/kg	wet	7	7	0.17	0.4	1.6			
Manganese	mg/kg	wet	7	7	34	92	188			
Mercury	mg/kg	wet	7	7	0.015	0.019	0.024			
Nickel	mg/kg	wet	7	7	0.9	1.2	1.7			
Selenium	mg/kg	wet	7	7	0.23	0.31	0.44			
Silver	mg/kg	wet	7	7	0.15	0.21	0.31			
Thallium	mg/kg	wet	7	6	0.0008	0.0013	0.0028	0.0006	0.0006	0.0006
Vanadium	mg/kg	wet	7	7	0.36	0.6	1.6			
Zinc	mg/kg	wet	7	7	11.3	14.7	17.9			
Calcium	mg/kg	wet	7	7	48,800	59,900	73,300			
Magnesium	mg/kg	wet	7	7	2,190	2,840	3,780			
Potassium	mg/kg	wet	7	7	1,590	1,850	2,010			
Sodium	mg/kg	wet	7	7	3,230	3,690	4,200			

Note: Analyses were conducted on whole body composite samples, with the exception of Sample ID CR0005, an individual river crab from Station 10.

Table D-51. 2004 conventional parameter summary statistics for river crabs—Site

Analyte	Concentration Units	Measurement Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Lipid	%	wet	5	5	0.58	0.9	1.3			
Total solids (dry wt. as percent of wet wt. or volume)	%	wet	7	7	27.9	33	39.6			

Note: Analyses were conducted on whole body composite samples, with the exception of Sample ID CR0005, an individual river crab from Station 10.

Table D-52. 2004 dioxin and furan summary statistics for river crabs—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
2,3,7,8-Tetrachlorodibenzo-*p*-dioxin	ng/kg	wet	1	1	0.32	0.32	0.32			
1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin	ng/kg	wet	1	1	0.061	0.061	0.061			
1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin	ng/kg	wet	1	0				0.017	0.017	0.017
1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin	ng/kg	wet	1	1	0.096	0.096	0.096			
1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin	ng/kg	wet	1	0				0.049	0.049	0.049
1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin	ng/kg	wet	1	0				1.2	1.2	1.2
Octachlorodibenzo-*p*-dioxin	ng/kg	wet	1	1	28	28	28			
2,3,7,8-Tetrachlorodibenzofuran	ng/kg	wet	1	1	1.1	1.1	1.1			
1,2,3,7,8-Pentachlorodibenzofuran	ng/kg	wet	1	1	0.13	0.13	0.13			
2,3,4,7,8-Pentachlorodibenzofuran	ng/kg	wet	1	1	0.14	0.14	0.14			
1,2,3,4,7,8-Hexachlorodibenzofuran	ng/kg	wet	1	0				0.16	0.16	0.16
1,2,3,6,7,8-Hexachlorodibenzofuran	ng/kg	wet	1	0				0.042	0.042	0.042
2,3,4,6,7,8-Hexachlorodibenzofuran	ng/kg	wet	1	0				0.027	0.027	0.027
1,2,3,7,8,9-Hexachlorodibenzofuran	ng/kg	wet	1	0				0.035	0.035	0.035
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ng/kg	wet	1	0				0.31	0.31	0.31
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ng/kg	wet	1	0				0.033	0.033	0.033
Octachlorodibenzofuran	ng/kg	wet	1	0				0.47	0.47	0.47
Total tetrachlorodibenzo-*p*-dioxins	ng/kg	wet	1	1	1.6	1.6	1.6			
Total pentachlorodibenzo-*p*-dioxins	ng/kg	wet	1	1	0.41	0.41	0.41			
Total hexachlorodibenzo-*p*-dioxins	ng/kg	wet	1	1	0.076	0.076	0.076			
Total heptachlorodibenzo-*p*-dioxins	ng/kg	wet	1	1	0.51	0.51	0.51			
Total heptachlorodibenzo-p-dioxins	ng/kg	wet	1	1	2.7	2.7	2.7			
Total tetrachlorodibenzofurans	ng/kg	wet	1	1	3.3	3.3	3.3			
Total pentachlorodibenzofurans	ng/kg	wet	1	1	2.4	2.4	2.4			
Total hexachlorodibenzofurans	ng/kg	wet	1	1	0.37	0.37	0.37			
Total heptachlorodibenzofurans	ng/kg	wet	1	1	0.52	0.52	0.52			

Note: Analyses were conducted on whole body composite samples, with the exception of Sample ID CR0006, an individual river crab from Station Aquaref1.

Table D-53. 2004 inorganic analyte summary statistics for river crabs—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Aluminum	mg/kg	wet	2	2	52.9	80	107			
Antimony	mg/kg	wet	2	2	0.0091	0.012	0.014			
Arsenic	mg/kg	wet	2	2	0.71	0.72	0.72			
Barium	mg/kg	wet	2	2	15.9	19.1	22.2			
Beryllium	mg/kg	wet	2	1	0.0037	0.0037	0.0037	0.0025	0.0025	0.0025
Cadmium	mg/kg	wet	2	2	0.024	0.039	0.054			
Chromium	mg/kg	wet	2	2	0.14	0.17	0.21			
Cobalt	mg/kg	wet	2	2	0.11	0.12	0.13			
Copper	mg/kg	wet	2	2	11.1	13.6	16			
Iron	mg/kg	wet	2	2	87.5	150	212			
Lead	mg/kg	wet	2	2	0.17	0.24	0.3			
Manganese	mg/kg	wet	2	2	36.1	45.3	54.5			
Mercury	mg/kg	wet	2	2	0.012	0.022	0.032			
Nickel	mg/kg	wet	2	2	0.87	0.92	0.97			
Selenium	mg/kg	wet	2	2	0.17	0.27	0.36			
Silver	mg/kg	wet	2	2	0.11	0.19	0.28			
Thallium	mg/kg	wet	2	2	0.0011	0.0012	0.0013			
Vanadium	mg/kg	wet	2	2	0.35	0.41	0.48			
Zinc	mg/kg	wet	2	2	10.1	13.3	16.4			
Calcium	mg/kg	wet	2	2	47,200	54,100	60,900			
Magnesium	mg/kg	wet	2	2	2,340	2,380	2,420			
Potassium	mg/kg	wet	2	2	1,640	1,950	2,250			
Sodium	mg/kg	wet	2	2	3,890	4,010	4,130			

Note: Analyses were conducted on whole body composite samples, with the exception of Sample ID CR0006, an individual river crab from Station Aquaref1.

Table D-54. 2004 conventional parameter summary statistics for river crabs—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Total solids (dry wt. as percent of wet wt. or volume)	%	wet	2	2	26.1	30.6	35			

Note: Analyses were conducted on whole body composite samples, with the exception of Sample ID CR0006, an individual river crab from Station Aquaref1.

Table D-55. 2004 semivolatile organic compound summary statistics for estuarine fishes—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
2,4,5-Trichlorophenol	µg/kg	wet	30	1	15	15	15	12	70	280
2,4,6-Trichlorophenol	µg/kg	wet	30	0				9.1	50	220
2,4-Dichlorophenol	µg/kg	wet	30	0				13	70	300
2,4-Dimethylphenol	µg/kg	wet	30	0				14	70	330
2,4-Dinitrophenol	µg/kg	wet	30	0				24	130	570
2,4-Dinitrotoluene	µg/kg	wet	30	1	130	130	130	8.8	50	210
2,6-Dinitrotoluene	µg/kg	wet	30	1	77	77	77	7.2	40	180
2-Chloronaphthalene	µg/kg	wet	30	0				6.1	30	150
2-Chlorophenol	µg/kg	wet	30	0				12	60	280
2-Methyl-4,6-dinitrophenol	µg/kg	wet	30	0				16	90	370
2-Methylnaphthalene	µg/kg	wet	30	30	0.47	2.1	3.1			
2-Methylphenol	µg/kg	wet	30	0				55	300	1,400
2-Nitroaniline	µg/kg	wet	30	0				27	150	650
2-Nitrophenol	µg/kg	wet	30	0				16	90	370
3,3'-Dichlorobenzidine	µg/kg	wet	30	0				810	4,000	20,000
3-Nitroaniline	µg/kg	wet	30	0				9.2	50	220
4-Bromophenyl ether	µg/kg	wet	30	0				5.7	30	140
4-Chloro-3-methylphenol	µg/kg	wet	30	0				74	400	1800
4-Chloroaniline	µg/kg	wet	30	0				6.1	30	150
4-Chlorophenyl-phenyl ether	µg/kg	wet	30	0				4.7	30	120
4-Methylphenol	µg/kg	wet	30	4	24	50	100	16	100	370
4-Nitroaniline	µg/kg	wet	30	0				27	150	650
4-Nitrophenol	µg/kg	wet	30	0				7.7	40	190
Acenaphthene	µg/kg	wet	30	30	0.33	1.4	2.3			
Acenaphthylene	µg/kg	wet	30	26	0.32	0.5	1.1	0.053	0.053	0.053
Acetophenone	µg/kg	wet	30	1	25	25	25	21	120	500
Anthracene	µg/kg	wet	30	30	0.49	1	5.4			
Atrazine	µg/kg	wet	30	0				5.9	130	840
Benz[a]anthracene	µg/kg	wet	30	23	0.17	2	17	0.056	0.057	0.06
Benzaldehyde	µg/kg	wet	30	0				750	4000	18000
Benzo[a]pyrene	µg/kg	wet	30	8	0.35	1.8	4.7	0.077	0.08	0.084
Benzo[b]fluoranthene	µg/kg	wet	30	13	0.3	1.7	7.5	0.046	0.048	0.05
Benzo[ghi]perylene	µg/kg	wet	30	26	0.19	0.7	3.3	0.11	0.11	0.11
Benzo[k]fluoranthene	µg/kg	wet	30	12	0.28	1.7	6.7	0.082	0.085	0.089
Biphenyl	µg/kg	wet	30	0				4.9	30	120
Bis[2-chloroethoxy]methane	µg/kg	wet	30	0				5.2	30	130
Bis[2-chloroethyl]ether	µg/kg	wet	30	0				9	50	220
Bis[2-chloroisopropyl]ether	µg/kg	wet	30	0				12	60	280

Table D-55. (cont.)

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Bis[2-Ethylhexyl]phthalate	µg/kg	wet	30	1	250	250	250	55	300	1400
Butylbenzyl phthalate	µg/kg	wet	30	8	280	400	480	15	60	390
Caprolactam	µg/kg	wet	30	0				14	70	330
Carbazole	µg/kg	wet	30	0				34	190	820
Chrysene	µg/kg	wet	30	24	0.3	2	14	0.083	0.084	0.084
Dibenz[a,h]anthracene	µg/kg	wet	30	10	0.14	0.4	0.96	0.08	0.083	0.084
Dibenzofuran	µg/kg	wet	30	30	0.47	1.1	1.5			
Diethyl phthalate	µg/kg	wet	30	8	130	220	460	9.7	30	110
Dimethyl phthalate	µg/kg	wet	30	2	140	190	230	5.3	40	130
Di-*n* -butyl phthalate	µg/kg	wet	30	2	820	2,200	3,500	17	110	360
Di-*n* -octyl phthalate	µg/kg	wet	30	0				14	70	330
Fluoranthene	µg/kg	wet	30	30	1.2	4	62			
Fluorene	µg/kg	wet	30	30	0.47	1.1	2			
Hexachlorobenzene	µg/kg	wet	30	0				6.1	30	150
Hexachlorobutadiene	µg/kg	wet	30	0				8.8	50	210
Hexachlorocyclopentadiene	µg/kg	wet	30	0				5,200	30,000	130,000
Hexachloroethane	µg/kg	wet	30	0				8.8	50	210
Indeno[1,2,3-cd]pyrene	µg/kg	wet	30	25	0.21	0.8	3.7	0.076	0.077	0.077
Isophorone	µg/kg	wet	30	1	68	68	68	6	30	150
Naphthalene	µg/kg	wet	30	0				2.8	6	11
Nitrobenzene	µg/kg	wet	30	0				11	60	250
N -nitroso-di-*n* -propylamine	µg/kg	wet	30	0				8.5	50	210
N -nitrosodiphenylamine	µg/kg	wet	30	0				9.8	60	240
Pentachlorophenol	µg/kg	wet	30	0				32	190	770
Phenanthrene	µg/kg	wet	30	30	0.84	2	19			
Phenol	µg/kg	wet	30	13	38	230	910	18	150	420
Pyrene	µg/kg	wet	30	28	0.98	3	43	0.073	0.074	0.074
Total PAHs	µg/kg	wet	30	30	12	20	190			

Note: PAH - polycyclic aromatic hydrocarbon
Analyses were conducted on whole body composite samples.

Table D-56. 2004 pesticide/PCB summary statistics for estuarine fishes—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
4,4'-DDD	µg/kg	wet	30	30	15	25	36			
4,4'-DDE	µg/kg	wet	30	30	20	29	35			
4,4'-DDT	µg/kg	wet	30	15	8.6	10	12	12	15	16
Aldrin	µg/kg	wet	30	7	1.2	2	3.3	0.55	1.1	1.5
α-Chlordane	µg/kg	wet	30	30	2.1	2.9	4			
α-Endosulfan	µg/kg	wet	30	18	2.6	3.8	5.5	1.1	1.1	1.3
α-Hexachlorocyclohexane	µg/kg	wet	30	1	0.23	0.23	0.23	0.17	0.2	1.5
β-Endosulfan	µg/kg	wet	30	1	3.1	3.1	3.1	0.36	0.8	1.1
β-Hexachlorocyclohexane	µg/kg	wet	30	4	1.1	1.7	2.3	0.22	1.2	2.8
δ-Hexachlorocyclohexane	µg/kg	wet	30	13	0.35	1.1	1.8	0.35	0.7	1.4
Dieldrin	µg/kg	wet	30	27	1.6	3	4.6	1.1	1.1	1.1
Endosulfan sulfate	µg/kg	wet	30	5	1	1.3	1.6	0.28	0.7	3.6
Endrin	µg/kg	wet	30	21	0.78	1.6	3.6	0.56	1.1	1.2
Endrin aldehyde	µg/kg	wet	30	13	0.47	2.7	3.7	0.18	1.1	2
Endrin ketone	µg/kg	wet	30	0				0.3	1.6	6
γ-Chlordane	µg/kg	wet	30	30	3.9	7	11			
γ-Hexachlorocyclohexane	µg/kg	wet	30	1	0.66	0.66	0.66	0.29	0.6	1.3
Heptachlor	µg/kg	wet	30	1	1.2	1.2	1.2	0.46	1.8	8.4
Heptachlor epoxide	µg/kg	wet	30	29	2.2	4.9	6.6	5.8	5.8	5.8
Methoxychlor	µg/kg	wet	30	8	3.9	4.9	6.9	0.83	3.4	9.2
Toxaphene	µg/kg	wet	30	0				61	150	290
Aroclor® 1016	µg/kg	wet	30	0				2.1	2.1	2.1
Aroclor® 1221	µg/kg	wet	30	0				3.2	3.3	3.3
Aroclor® 1232	µg/kg	wet	30	0				2.1	2.1	2.1
Aroclor® 1242	µg/kg	wet	30	0				3.6	3.7	3.7
Aroclor® 1248	µg/kg	wet	30	30	120	170	230			
Aroclor® 1254	µg/kg	wet	30	30	160	230	310			
Aroclor® 1260	µg/kg	wet	30	30	150	200	270			
PCBs	µg/kg	wet	30	30	450	590	810			

Note: PCB - polychlorinated biphenyl
Analyses were conducted on whole body composite samples.

Table D-57. 2004 dioxin and furan summary statistics for estuarine fishes—Site

Analyte	Concentration Units	Measurement Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
2,3,7,8-Tetrachlorodibenzo-*p*-dioxin	ng/kg	wet	6	6	0.17	0.48	0.6			
1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin	ng/kg	wet	6	6	0.033	0.13	0.18			
1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin	ng/kg	wet	6	3	0.042	0.048	0.052	0.011	0.024	0.045
1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin	ng/kg	wet	6	5	0.15	0.2	0.24	0.013	0.013	0.013
1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin	ng/kg	wet	6	4	0.063	0.09	0.12	0.012	0.014	0.016
1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin	ng/kg	wet	6	4	1.5	1.7	1.9	0.19	0.8	1.3
Octachlorodibenzo-*p*-dioxin	ng/kg	wet	6	5	27	35	45	2.8	2.8	2.8
2,3,7,8-Tetrachlorodibenzofuran	ng/kg	wet	6	5	0.5	0.58	0.63	0.32	0.32	0.32
1,2,3,7,8-Pentachlorodibenzofuran	ng/kg	wet	6	5	0.056	0.074	0.084	0.012	0.012	0.012
2,3,4,7,8-Pentachlorodibenzofuran	ng/kg	wet	6	6	0.09	0.3	0.4			
1,2,3,4,7,8-Hexachlorodibenzofuran	ng/kg	wet	6	5	0.095	0.13	0.16	0.019	0.019	0.019
1,2,3,6,7,8-Hexachlorodibenzofuran	ng/kg	wet	6	5	0.053	0.065	0.074	0.021	0.021	0.021
2,3,4,6,7,8-Hexachlorodibenzofuran	ng/kg	wet	6	0				0.013	0.021	0.035
1,2,3,7,8,9-Hexachlorodibenzofuran	ng/kg	wet	6	0				0.014	0.021	0.035
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ng/kg	wet	6	6	0.043	0.43	0.93			
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ng/kg	wet	6	0				0.021	0.034	0.053
Octachlorodibenzofuran	ng/kg	wet	6	0				0.068	0.66	0.89
Total tetrachlorodibenzo-*p*-dioxins	ng/kg	wet	6	6	0.17	0.49	0.6			
Total pentachlorodibenzo-*p*-dioxins	ng/kg	wet	6	4	0.13	0.15	0.18	0.018	0.019	0.019
Total hexachlorodibenzo-*p*-dioxins	ng/kg	wet	6	5	0.62	0.8	1.2	0.011	0.011	0.011
Total heptachlorodibenzo-*p*-dioxins	ng/kg	wet	6	6	0.19	2.8	4.1			
Total heptachlorodibenzo-*p*-dioxins	ng/kg	wet	6	6	0.18	0.7	1.1			
Total pentachlorodibenzofurans	ng/kg	wet	6	6	0.11	0.6	1			
Total hexachlorodibenzofurans	ng/kg	wet	6	5	0.18	0.27	0.39	0.019	0.019	0.019
Total heptachlorodibenzofurans	ng/kg	wet	6	6	0.043	0.7	1.3			

Note: Analyses were conducted on whole body composite samples.

Table D-58. 2004 inorganic analyte summary statistics for estuarine fishes—Site

Analyte	Concentration Units	Measurement Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Aluminum	mg/kg	wet	30	30	6.79	63	242			
Antimony	mg/kg	wet	30	30	0.0059	0.013	0.027			
Arsenic	mg/kg	wet	30	30	0.53	0.9	1.4			
Barium	mg/kg	wet	30	30	0.83	1.2	1.9			
Beryllium	mg/kg	wet	30	11	0.002	0.006	0.011	0.0017	0.0018	0.0018
Cadmium	mg/kg	wet	30	30	0.0068	0.009	0.014			
Chromium	mg/kg	wet	30	21	0.098	0.26	0.7	0.074	0.076	0.078
Cobalt	mg/kg	wet	30	30	0.051	0.09	0.2			
Copper	mg/kg	wet	30	30	2.84	3.81	5.36			
Iron	mg/kg	wet	30	30	30.1	108	344			
Lead	mg/kg	wet	30	30	0.059	0.2	0.62			
Manganese	mg/kg	wet	30	30	4.47	6.7	11.1			
Mercury	mg/kg	wet	30	30	0.016	0.025	0.041			
Nickel	mg/kg	wet	30	30	0.34	0.54	0.83			
Selenium	mg/kg	wet	30	30	0.36	0.49	0.67			
Silver	mg/kg	wet	30	30	0.054	0.07	0.098			
Thallium	mg/kg	wet	30	19	0.0005	0.001	0.0022	0.0005	0.0005	0.0005
Vanadium	mg/kg	wet	30	30	0.29	0.5	1.1			
Zinc	mg/kg	wet	30	30	34.9	38.3	40.6			
Calcium	mg/kg	wet	30	30	10,000	13,500	17,900			
Magnesium	mg/kg	wet	30	30	445	485	547			
Potassium	mg/kg	wet	30	30	2,540	2,910	3,160			
Sodium	mg/kg	wet	30	30	1,340	1,500	1,680			

Note: Analyses were conducted on whole body composite samples.

Table D-59. 2004 conventional parameter summary statistics for estuarine fishes—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Lipid	%	wet	30	30	1.7	2.5	3.2			
Total solids (dry wt. as percent of wet wt. or volume)	%	wet	30	30	23.7	24.9	26.1			

Note: Analyses were conducted on whole body composite samples.

Table D-60. 2004 semivolatile organic compound summary statistics for estuarine fishes—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
2,4,5-Trichlorophenol	µg/kg	wet	5	0				120	120	130
2,4,6-Trichlorophenol	µg/kg	wet	5	0				94	95	97
2,4-Dichlorophenol	µg/kg	wet	5	0				130	130	140
2,4-Dimethylphenol	µg/kg	wet	5	0				140	140	150
2,4-Dinitrophenol	µg/kg	wet	5	0				250	250	260
2,4-Dinitrotoluene	µg/kg	wet	5	0				91	92	94
2,6-Dinitrotoluene	µg/kg	wet	5	0				75	76	77
2-Chloronaphthalene	µg/kg	wet	5	0				63	64	65
2-Chlorophenol	µg/kg	wet	5	0				120	120	130
2-Methyl-4,6-dinitrophenol	µg/kg	wet	5	0				160	160	170
2-Methylnaphthalene	µg/kg	wet	5	5	1.6	2.2	3.3			
2-Methylphenol	µg/kg	wet	5	0				570	570	590
2-Nitroaniline	µg/kg	wet	5	0				280	280	290
2-Nitrophenol	µg/kg	wet	5	0				160	160	170
3,3'-Dichlorobenzidine	µg/kg	wet	5	0				8,300	8,400	8,600
3-Nitroaniline	µg/kg	wet	5	0				95	96	98
4-Bromophenyl ether	µg/kg	wet	5	0				59	60	61
4-Chloro-3-methylphenol	µg/kg	wet	5	0				770	780	790
4-Chloroaniline	µg/kg	wet	5	0				63	64	65
4-Chlorophenyl-phenyl ether	µg/kg	wet	5	0				48	49	50
4-Methylphenol	µg/kg	wet	5	0				160	160	170
4-Nitroaniline	µg/kg	wet	5	0				280	280	290
4-Nitrophenol	µg/kg	wet	5	0				80	81	83
Acenaphthene	µg/kg	wet	5	5	0.94	1.2	1.7			
Acenaphthylene	µg/kg	wet	5	5	0.35	0.49	0.6			
Acetophenone	µg/kg	wet	5	0				220	220	220
Anthracene	µg/kg	wet	5	5	0.6	0.72	0.81			
Atrazine	µg/kg	wet	5	0				59	60	61
Benz[a]anthracene	µg/kg	wet	5	4	0.51	0.9	1.2	0.06	0.06	0.06
Benzaldehyde	µg/kg	wet	5	0				7,800	7,900	8,000
Benzo[a]pyrene	µg/kg	wet	5	0				0.081	0.083	0.084
Benzo[b]fluoranthene	µg/kg	wet	5	3	0.53	0.9	1.4	0.048	0.049	0.05
Benzo[ghi]perylene	µg/kg	wet	5	4	0.41	0.6	0.9	0.11	0.11	0.11
Benzo[k]fluoranthene	µg/kg	wet	5	3	0.65	0.9	1.3	0.086	0.088	0.089
Biphenyl	µg/kg	wet	5	0				51	51	52
Bis[2-chloroethoxy]methane	µg/kg	wet	5	0				54	54	55
Bis[2-chloroethyl]ether	µg/kg	wet	5	0				93	94	96
Bis[2-chloroisopropyl]ether	µg/kg	wet	5	0				120	120	130

Table D-60. (cont.)

Analyte	Concentration Units	Measurement Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Bis[2-Ethylhexyl]phthalate	µg/kg	wet	5	1	1,900	1,900	1,900	570	580	590
Butylbenzyl phthalate	µg/kg	wet	5	5	260	330	410			
Caprolactam	µg/kg	wet	5	0				140	140	150
Carbazole	µg/kg	wet	5	0				360	360	370
Chrysene	µg/kg	wet	5	4	0.64	1.1	1.8	0.088	0.088	0.088
Dibenz[a,h]anthracene	µg/kg	wet	5	2	0.16	0.18	0.2	0.084	0.085	0.087
Dibenzofuran	µg/kg	wet	5	5	0.81	1	1.3			
Diethyl phthalate	µg/kg	wet	5	0				100	110	110
Dimethyl phthalate	µg/kg	wet	5	0				94	94	94
Di-*n*-butyl phthalate	µg/kg	wet	5	1	3,500	3,500	3,500	180	190	210
Di-*n*-octyl phthalate	µg/kg	wet	5	0				140	140	150
Fluoranthene	µg/kg	wet	5	5	1.9	2.3	2.8			
Fluorene	µg/kg	wet	5	5	0.82	1	1.2			
Hexachlorobenzene	µg/kg	wet	5	0				63	64	65
Hexachlorobutadiene	µg/kg	wet	5	0				91	92	94
Hexachlorocyclopentadiene	µg/kg	wet	5	0				54,000	54,000	55,000
Hexachloroethane	µg/kg	wet	5	0				91	92	94
Indeno[1,2,3-cd]pyrene	µg/kg	wet	5	4	0.41	0.62	0.89	0.081	0.081	0.081
Isophorone	µg/kg	wet	5	0				62	63	64
Naphthalene	µg/kg	wet	5	0				3.3	4.7	6.8
Nitrobenzene	µg/kg	wet	5	0				110	110	110
N-nitroso-di-*n*-propylamine	µg/kg	wet	5	0				88	88	90
N-nitrosodiphenylamine	µg/kg	wet	5	0				110	110	110
Pentachlorophenol	µg/kg	wet	5	0				330	340	340
Phenanthrene	µg/kg	wet	5	5	1.3	1.5	1.8			
Phenol	µg/kg	wet	5	2	270	390	510	190	190	190
Pyrene	µg/kg	wet	5	5	1.3	1.8	2.6			
Total PAHs	µg/kg	wet	5	5	13	17	23			

Note: PAH - polycyclic aromatic hydrocarbon
Analyses were conducted on whole body composite samples.

Table D-61. 2004 pesticide/PCB summary statistics for estuarine fishes—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
4,4'-DDD	µg/kg	wet	5	5	20	25	32			
4,4'-DDE	µg/kg	wet	5	5	23	28	33			
4,4'-DDT	µg/kg	wet	5	5	7.6	9	10			
Aldrin	µg/kg	wet	5	1	2.3	2.3	2.3	0.56	0.9	1.3
α-Chlordane	µg/kg	wet	5	5	2	2.8	3.3			
α-Endosulfan	µg/kg	wet	5	1	5.3	5.3	5.3	1.1	1.1	1.1
α-Hexachlorocyclohexane	µg/kg	wet	5	0				0.17	0.28	0.57
β-Endosulfan	µg/kg	wet	5	0				0.37	0.8	1.1
β-Hexachlorocyclohexane	µg/kg	wet	5	0				1.1	1.2	1.4
δ-Hexachlorocyclohexane	µg/kg	wet	5	2	1.3	1.4	1.4	0.36	0.36	0.36
Dieldrin	µg/kg	wet	5	5	2.3	2.9	3.3			
Endosulfan sulfate	µg/kg	wet	5	1	1.2	1.2	1.2	0.28	1.3	2.1
Endrin	µg/kg	wet	5	1	1.6	1.6	1.6	0.85	1.1	1.3
Endrin aldehyde	µg/kg	wet	5	2	1.3	2.5	3.6	1.1	1.1	1.1
Endrin ketone	µg/kg	wet	5	0				0.3	1.3	5.4
γ-Chlordane	µg/kg	wet	5	5	3.9	5	6.1			
γ-Hexachlorocyclohexane	µg/kg	wet	5	0				0.29	0.6	1.1
Heptachlor	µg/kg	wet	5	1	1.6	1.6	1.6	0.47	1.2	1.6
Heptachlor epoxide	µg/kg	wet	5	5	4.4	5.2	6.8			
Methoxychlor	µg/kg	wet	5	0				1.1	6	9.2
Toxaphene	µg/kg	wet	5	0				67	120	180
Aroclor® 1016	µg/kg	wet	5	0				2.1	2.1	2.1
Aroclor® 1221	µg/kg	wet	5	0				3.2	3.3	3.3
Aroclor® 1232	µg/kg	wet	5	0				2.1	2.1	2.1
Aroclor® 1242	µg/kg	wet	5	0				3.7	3.7	3.7
Aroclor® 1248	µg/kg	wet	5	5	140	160	170			
Aroclor® 1254	µg/kg	wet	5	5	200	240	260			
Aroclor® 1260	µg/kg	wet	5	5	160	200	230			
PCBs	µg/kg	wet	5	5	500	590	660			

Note: PCB - polychlorinated biphenyl
Analyses were conducted on whole body composite samples.

Table D-62. 2004 dioxin and furan summary statistics for estuarine fishes—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
2,3,7,8-Tetrachlorodibenzo-*p*-dioxin	ng/kg	wet	3	3	0.51	0.55	0.59			
1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin	ng/kg	wet	3	3	0.13	0.14	0.17			
1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin	ng/kg	wet	3	2	0.025	0.029	0.033	0.013	0.013	0.013
1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin	ng/kg	wet	3	3	0.11	0.12	0.14			
1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin	ng/kg	wet	3	2	0.031	0.031	0.031	0.014	0.014	0.014
1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin	ng/kg	wet	3	0				0.3	0.49	0.65
Octachlorodibenzo-*p*-dioxin	ng/kg	wet	3	2	10	11	13	3.5	3.5	3.5
2,3,7,8-Tetrachlorodibenzofuran	ng/kg	wet	3	3	0.54	0.68	0.87			
1,2,3,7,8-Pentachlorodibenzofuran	ng/kg	wet	3	3	0.051	0.063	0.072			
2,3,4,7,8-Pentachlorodibenzofuran	ng/kg	wet	3	3	0.28	0.32	0.38			
1,2,3,4,7,8-Hexachlorodibenzofuran	ng/kg	wet	3	2	0.059	0.062	0.065	0.018	0.018	0.018
1,2,3,6,7,8-Hexachlorodibenzofuran	ng/kg	wet	3	1	0.029	0.029	0.029	0.019	0.025	0.03
2,3,4,6,7,8-Hexachlorodibenzofuran	ng/kg	wet	3	0				0.019	0.023	0.031
1,2,3,7,8,9-Hexachlorodibenzofuran	ng/kg	wet	3	0				0.018	0.023	0.03
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ng/kg	wet	3	3	0.05	0.1	0.12			
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ng/kg	wet	3	0				0.019	0.021	0.023
Octachlorodibenzofuran	ng/kg	wet	3	0				0.074	0.15	0.2
Total tetrachlorodibenzo-*p*-dioxins	ng/kg	wet	3	3	1.5	1.7	1.8			
Total pentachlorodibenzo-*p*-dioxins	ng/kg	wet	3	3	0.51	0.55	0.59			
Total hexachlorodibenzo-*p*-dioxins	ng/kg	wet	3	3	0.14	0.15	0.17			
Total heptachlorodibenzo-*p*-dioxins	ng/kg	wet	3	3	0.13	0.21	0.37			
Total heptachlorodibenzo-*p*-dioxins	ng/kg	wet	3	3	0.46	0.9	1.3			
Total tetrachlorodibenzofurans	ng/kg	wet	3	3	0.58	0.72	0.9			
Total pentachlorodibenzofurans	ng/kg	wet	3	3	0.56	0.63	0.74			
Total hexachlorodibenzofurans	ng/kg	wet	3	1	0.08	0.08	0.08	0.018	0.023	0.027
Total heptachlorodibenzofurans	ng/kg	wet	3	3	0.05	0.12	0.2			

Note: Analyses were conducted on whole body composite samples.

Table D-63. 2004 inorganic analyte summary statistics for estuarine fishes—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Aluminum	mg/kg	wet	5	5	10.9	39.8	55.8			
Antimony	mg/kg	wet	5	5	0.01	0.013	0.018			
Arsenic	mg/kg	wet	5	5	0.47	0.62	0.7			
Barium	mg/kg	wet	5	5	0.92	1.2	1.5			
Beryllium	mg/kg	wet	5	3	0.002	0.0025	0.0028	0.0017	0.0018	0.0018
Cadmium	mg/kg	wet	5	5	0.0078	0.009	0.012			
Chromium	mg/kg	wet	5	4	0.098	0.11	0.12	0.078	0.078	0.078
Cobalt	mg/kg	wet	5	5	0.061	0.09	0.11			
Copper	mg/kg	wet	5	5	2.93	3.49	4.44			
Iron	mg/kg	wet	5	5	40.7	93	148			
Lead	mg/kg	wet	5	5	0.091	0.18	0.24			
Manganese	mg/kg	wet	5	5	5.28	7.08	9.86			
Mercury	mg/kg	wet	5	5	0.017	0.02	0.022			
Nickel	mg/kg	wet	5	5	0.45	0.52	0.59			
Selenium	mg/kg	wet	5	5	0.32	0.4	0.45			
Silver	mg/kg	wet	5	5	0.04	0.054	0.062			
Thallium	mg/kg	wet	5	4	0.0007	0.0008	0.001	0.0005	0.0005	0.0005
Vanadium	mg/kg	wet	5	5	0.35	0.46	0.54			
Zinc	mg/kg	wet	5	5	35.8	38.4	40.4			
Calcium	mg/kg	wet	5	5	12,200	14,300	15,800			
Magnesium	mg/kg	wet	5	5	485	496	503			
Potassium	mg/kg	wet	5	5	2,720	2,810	2,900			
Sodium	mg/kg	wet	5	5	1,320	1,430	1,510			

Note: Analyses were conducted on whole body composite samples.

Table D-64. 2004 conventional parameter summary statistics for estuarine fishes—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Lipid	%	wet	5	5	2.2	2.7	3.2			
Total solids (dry wt. as percent of wet wt. or volume)	%	wet	5	5	24.5	25	25.9			

Note: Analyses were conducted on whole body composite samples.

Table D-65. 2004 semivolatile organic compound summary statistics for earthworm bioaccumulation test samples—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
2,4,5-Trichlorophenol	µg/kg	wet	1	0				360	360	360
2,4,6-Trichlorophenol	µg/kg	wet	1	0				290	290	290
2,4-Dichlorophenol	µg/kg	wet	1	0				390	390	390
2,4-Dimethylphenol	µg/kg	wet	1	0				420	420	420
2,4-Dinitrophenol	µg/kg	wet	1	0				740	740	740
2,4-Dinitrotoluene	µg/kg	wet	1	0				280	280	280
2,6-Dinitrotoluene	µg/kg	wet	1	0				230	230	230
2-Chloronaphthalene	µg/kg	wet	1	0				190	190	190
2-Chlorophenol	µg/kg	wet	1	0				360	360	360
2-Methyl-4,6-dinitrophenol	µg/kg	wet	1	0				480	480	480
2-Methylnaphthalene	µg/kg	wet	1	1	2.3	2.3	2.3			
2-Methylphenol	µg/kg	wet	1	0				1,700	1,700	1,700
2-Nitroaniline	µg/kg	wet	1	0				830	830	830
2-Nitrophenol	µg/kg	wet	1	0				480	480	480
3,3'-Dichlorobenzidine	µg/kg	wet	1	0				25,000	25,000	25,000
3-Nitroaniline	µg/kg	wet	1	0				290	290	290
4-Bromophenyl ether	µg/kg	wet	1	0				180	180	180
4-Chloro-3-methylphenol	µg/kg	wet	1	0				2,300	2,300	2,300
4-Chloroaniline	µg/kg	wet	1	0				190	190	190
4-Chlorophenyl-phenyl ether	µg/kg	wet	1	0				150	150	150
4-Methylphenol	µg/kg	wet	1	0				480	480	480
4-Nitroaniline	µg/kg	wet	1	0				830	830	830
4-Nitrophenol	µg/kg	wet	1	0				240	240	240
Acenaphthene	µg/kg	wet	1	0				0.24	0.24	0.24
Acenaphthylene	µg/kg	wet	1	0				0.16	0.16	0.16
Acetophenone	µg/kg	wet	1	0				640	640	640
Anthracene	µg/kg	wet	1	1	1.6	1.6	1.6			
Atrazine	µg/kg	wet	1	0				180	180	180
Benz[a]anthracene	µg/kg	wet	1	1	3	3	3			
Benzaldehyde	µg/kg	wet	1	0				24,000	24,000	24,000
Benzo[a]pyrene	µg/kg	wet	1	1	3.3	3.3	3.3			
Benzo[b]fluoranthene	µg/kg	wet	1	1	4.8	4.8	4.8			
Benzo[ghi]perylene	µg/kg	wet	1	1	2.8	2.8	2.8			
Benzo[k]fluoranthene	µg/kg	wet	1	1	3.8	3.8	3.8			
Biphenyl	µg/kg	wet	1	0				150	150	150
Bis[2-chloroethoxy]methane	µg/kg	wet	1	0				160	160	160
Bis[2-chloroethyl]ether	µg/kg	wet	1	0				280	280	280
Bis[2-chloroisopropyl]ether	µg/kg	wet	1	0				360	360	360

Table D-65. (cont.)

Analyte	Concentration Units	Measurement Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Bis[2-Ethylhexyl]phthalate	µg/kg	wet	1	0				1,700	1,700	1,700
Butylbenzyl phthalate	µg/kg	wet	1	0				450	450	450
Caprolactam	µg/kg	wet	1	0				420	420	420
Carbazole	µg/kg	wet	1	0				1,100	1,100	1,100
Chrysene	µg/kg	wet	1	1	8.5	8.5	8.5			
Dibenz[a,h]anthracene	µg/kg	wet	1	1	0.76	0.76	0.76			
Dibenzofuran	µg/kg	wet	1	1	1.3	1.3	1.3			
Diethyl phthalate	µg/kg	wet	1	0				300	300	300
Dimethyl phthalate	µg/kg	wet	1	0				170	170	170
Di-*n* -butyl phthalate	µg/kg	wet	1	0				900	900	900
Di-*n* -octyl phthalate	µg/kg	wet	1	0				420	420	420
Fluoranthene	µg/kg	wet	1	1	8.1	8.1	8.1			
Fluorene	µg/kg	wet	1	1	1.5	1.5	1.5			
Hexachlorobenzene	µg/kg	wet	1	0				190	190	190
Hexachlorobutadiene	µg/kg	wet	1	0				280	280	280
Hexachlorocyclopentadiene	µg/kg	wet	1	0				160,000	160,000	160,000
Hexachloroethane	µg/kg	wet	1	0				280	280	280
Indeno[1,2,3-cd]pyrene	µg/kg	wet	1	1	3.5	3.5	3.5			
Isophorone	µg/kg	wet	1	0				190	190	190
Naphthalene	µg/kg	wet	1	1	4.2	4.2	4.2			
Nitrobenzene	µg/kg	wet	1	0				320	320	320
N -nitroso-di-*n* -propylamine	µg/kg	wet	1	0				270	270	270
N -nitrosodiphenylamine	µg/kg	wet	1	0				310	310	310
Pentachlorophenol	µg/kg	wet	1	0				990	990	990
Phenanthrene	µg/kg	wet	1	1	5.8	5.8	5.8			
Phenol	µg/kg	wet	1	0				550	550	550
Pyrene	µg/kg	wet	1	1	7	7	7			
Total PAHs	µg/kg	wet	1	1	60	60	60			

Note: PAH - polycyclic aromatic hydrocarbon

Table D-66. 2004 pesticide/PCB summary statistics for earthworm bioaccumulation test samples—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
4,4'-DDD	µg/kg	wet	9	4	2	2.5	3.2	0.25	1.1	2.4
4,4'-DDE	µg/kg	wet	9	4	1.2	3.6	6.8	2.1	2.4	2.7
4,4'-DDT	µg/kg	wet	9	6	6.9	22	41	5.1	60	180
Aldrin	µg/kg	wet	9	4	1.8	5	14	1.7	2.3	3
α-Chlordane	µg/kg	wet	9	0				0.69	3	13
α-Endosulfan	µg/kg	wet	9	3	0.41	14	41	0.33	1.9	2.7
α-Hexachlorocyclohexane	µg/kg	wet	9	2	1	1.3	1.6	0.33	1.4	2.7
β-Endosulfan	µg/kg	wet	9	1	1.6	1.6	1.6	0.67	1.8	4.1
β-Hexachlorocyclohexane	µg/kg	wet	9	1	2.3	2.3	2.3	0.46	1.8	3.7
δ-Hexachlorocyclohexane	µg/kg	wet	9	3	0.98	2.1	2.9	0.65	2.7	4.6
Dieldrin	µg/kg	wet	9	1	1.6	1.6	1.6	0.21	1.3	2.7
Endosulfan sulfate	µg/kg	wet	9	0				0.52	1.3	2.4
Endrin	µg/kg	wet	9	2	4.6	6.5	8.4	0.19	2.5	4.7
Endrin aldehyde	µg/kg	wet	9	2	4.4	5.7	6.9	0.4	2.4	4.8
Endrin ketone	µg/kg	wet	9	1	2.1	2.1	2.1	0.68	2.3	7.3
γ-Chlordane	µg/kg	wet	9	7	2.9	40	180	1.7	2.2	2.7
γ-Hexachlorocyclohexane	µg/kg	wet	9	1	11	11	11	0.66	1.8	2.7
Heptachlor	µg/kg	wet	9	0				0.86	1.2	2.1
Heptachlor epoxide	µg/kg	wet	9	1	98	98	98	1.9	2.8	5.3
Methoxychlor	µg/kg	wet	9	3	4.8	6	7.4	1.5	2.3	2.7
Toxaphene	µg/kg	wet	9	0				95	400	1,100
Aroclor® 1016	µg/kg	wet	9	0				3.8	9	41
Aroclor® 1221	µg/kg	wet	9	0				5.9	13	63
Aroclor® 1232	µg/kg	wet	9	0				3.8	9	41
Aroclor® 1242	µg/kg	wet	9	0				6.7	15	71
Aroclor® 1248	µg/kg	wet	9	9	30	900	5,100			
Aroclor® 1254	µg/kg	wet	9	9	66	800	4,200			
Aroclor® 1260	µg/kg	wet	9	8	74	270	790	96	96	96
PCBs	µg/kg	wet	9	9	190	2,000	9,300			

Note: PCB - polychlorinated biphenyl

Table D-67. 2004 inorganic analyte summary statistics for earthworm bioaccumulation test samples—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Aluminum	mg/kg	wet	10	10	285	575	890			
Antimony	mg/kg	wet	10	10	0.016	0.06	0.23			
Arsenic	mg/kg	wet	10	10	2.45	46	328			
Barium	mg/kg	wet	10	10	0.81	1.9	3.58			
Beryllium	mg/kg	wet	10	10	0.009	0.02	0.048			
Cadmium	mg/kg	wet	10	10	0.19	0.38	0.63			
Chromium	mg/kg	wet	10	10	0.89	2.76	5.67			
Cobalt	mg/kg	wet	10	10	0.64	1.1	1.7			
Copper	mg/kg	wet	10	10	3.05	16.5	43.6			
Iron	mg/kg	wet	10	10	249	820	2,260			
Lead	mg/kg	wet	10	10	2.52	6.4	27			
Manganese	mg/kg	wet	10	10	2.51	7.3	21.6			
Mercury	mg/kg	wet	10	10	0.07	0.6	1.94			
Nickel	mg/kg	wet	10	10	0.53	1.3	2.89			
Selenium	mg/kg	wet	10	10	0.16	0.25	0.36			
Silver	mg/kg	wet	10	10	0.12	0.5	1.1			
Thallium	mg/kg	wet	10	10	0.0075	0.019	0.044			
Vanadium	mg/kg	wet	10	10	0.53	1.2	3.06			
Zinc	mg/kg	wet	10	10	14.3	20.2	31.6			
Calcium	mg/kg	wet	10	10	474	670	1,080			
Magnesium	mg/kg	wet	10	10	112	172	324			
Potassium	mg/kg	wet	10	10	1,300	1,540	2,050			
Sodium	mg/kg	wet	10	10	642	1,020	1,870			

Table D-68. 2004 conventional parameter summary statistics for earthworm bioaccumulation test samples—Site

Analyte	Concentration Units	Measurement Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Lipid	%	wet	9	9	1.2	1.7	2.1			
Total solids (dry wt. as percent of wet wt. or volume)	%	wet	10	10	11.9	14.5	18			

Table D-69. 2004 semivolatile organic compound summary statistics for earthworm bioaccumulation test samples—Reference

Analyte	Concentration Units	Measurement Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
2,4,5-Trichlorophenol	µg/kg	wet	2	0				220	240	260
2,4,6-Trichlorophenol	µg/kg	wet	2	0				180	200	210
2,4-Dichlorophenol	µg/kg	wet	2	0				240	260	280
2,4-Dimethylphenol	µg/kg	wet	2	0				260	280	300
2,4-Dinitrophenol	µg/kg	wet	2	0				460	500	530
2,4-Dinitrotoluene	µg/kg	wet	2	0				170	190	200
2,6-Dinitrotoluene	µg/kg	wet	2	0				140	160	170
2-Chloronaphthalene	µg/kg	wet	2	0				120	130	140
2-Chlorophenol	µg/kg	wet	2	0				220	240	260
2-Methyl-4,6-dinitrophenol	µg/kg	wet	2	0				300	330	350
2-Methylnaphthalene	µg/kg	wet	2	2	1.5	1.6	1.6			
2-Methylphenol	µg/kg	wet	2	0				1,100	1,200	1,300
2-Nitroaniline	µg/kg	wet	2	0				520	560	600
2-Nitrophenol	µg/kg	wet	2	0				300	330	350
3,3'-Dichlorobenzidine	µg/kg	wet	2	0				16,000	17,000	18,000
3-Nitroaniline	µg/kg	wet	2	0				180	200	210
4-Bromophenyl ether	µg/kg	wet	2	0				110	120	130
4-Chloro-3-methylphenol	µg/kg	wet	2	0				1,500	1,600	1,700
4-Chloroaniline	µg/kg	wet	2	0				120	130	140
4-Chlorophenyl-phenyl ether	µg/kg	wet	2	0				90	100	110
4-Methylphenol	µg/kg	wet	2	0				300	330	350
4-Nitroaniline	µg/kg	wet	2	0				520	560	600
4-Nitrophenol	µg/kg	wet	2	0				150	170	180
Acenaphthene	µg/kg	wet	2	2	0.51	0.53	0.54			
Acenaphthylene	µg/kg	wet	2	2	1.4	1.7	2			
Acetophenone	µg/kg	wet	2	0				400	430	460
Anthracene	µg/kg	wet	2	2	1.8	2	2.2			
Atrazine	µg/kg	wet	2	0				110	120	130
Benz[a]anthracene	µg/kg	wet	2	2	3.8	4.7	5.5			
Benzaldehyde	µg/kg	wet	2	0				15,000	16,000	17,000
Benzo[a]pyrene	µg/kg	wet	2	2	5	5.3	5.6			
Benzo[b]fluoranthene	µg/kg	wet	2	2	5.4	6	6.6			
Benzo[ghi]perylene	µg/kg	wet	2	2	4.2	4.4	4.5			
Benzo[k]fluoranthene	µg/kg	wet	2	2	5.6	6.1	6.6			
Biphenyl	µg/kg	wet	2	0				94	100	110
Bis[2-chloroethoxy]methane	µg/kg	wet	2	0				100	110	120
Bis[2-chloroethyl]ether	µg/kg	wet	2	0				180	190	200
Bis[2-chloroisopropyl]ether	µg/kg	wet	2	0				220	240	260

Table D-69. (cont.)

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Bis[2-Ethylhexyl]phthalate	µg/kg	wet	2	0				1,100	1,200	1,300
Butylbenzyl phthalate	µg/kg	wet	2	0				280	310	330
Caprolactam	µg/kg	wet	2	0				260	280	300
Carbazole	µg/kg	wet	2	0				660	710	760
Chrysene	µg/kg	wet	2	2	6	7.8	9.6			
Dibenz[a,h]anthracene	µg/kg	wet	2	2	1.1	1.1	1.1			
Dibenzofuran	µg/kg	wet	2	2	0.66	0.79	0.92			
Diethyl phthalate	µg/kg	wet	2	0				190	210	220
Dimethyl phthalate	µg/kg	wet	2	0				110	120	120
Di-*n*-butyl phthalate	µg/kg	wet	2	0				570	620	660
Di-*n*-octyl phthalate	µg/kg	wet	2	0				260	280	300
Fluoranthene	µg/kg	wet	2	2	8	9	10			
Fluorene	µg/kg	wet	2	2	1.1	1.2	1.2			
Hexachlorobenzene	µg/kg	wet	2	0				120	130	140
Hexachlorobutadiene	µg/kg	wet	2	0				170	190	200
Hexachlorocyclopentadiene	µg/kg	wet	2	0				100,000	110,000	120,000
Hexachloroethane	µg/kg	wet	2	0				170	190	200
Indeno[1,2,3-cd]pyrene	µg/kg	wet	2	2	4.5	4.6	4.7			
Isophorone	µg/kg	wet	2	0				120	130	140
Naphthalene	µg/kg	wet	2	2	2.7	2.8	2.8			
Nitrobenzene	µg/kg	wet	2	0				200	220	230
N-nitroso-di-*n*-propylamine	µg/kg	wet	2	0				170	180	190
N-nitrosodiphenylamine	µg/kg	wet	2	0				190	210	220
Pentachlorophenol	µg/kg	wet	2	0				620	670	720
Phenanthrene	µg/kg	wet	2	2	4.8	5.2	5.5			
Phenol	µg/kg	wet	2	0				340	370	390
Pyrene	µg/kg	wet	2	2	7.8	9	10			
Total PAHs	µg/kg	wet	2	2	66	72	77			

Note: PAH - polycyclic aromatic hydrocarbon

Table D-70. 2004 pesticide/PCB compound summary statistics for earthworm bioaccumulation test samples—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
4,4'-DDD	µg/kg	wet	3	0				0.28	1.3	2.1
4,4'-DDE	µg/kg	wet	3	2	1.3	1.8	2.3	1.5	1.5	1.5
4,4'-DDT	µg/kg	wet	3	2	7.8	9	11	8	8	8
Aldrin	µg/kg	wet	3	0				0.41	0.8	1.5
α-Chlordane	µg/kg	wet	3	3	1.9	3.1	5.2			
α-Endosulfan	µg/kg	wet	3	0				1.3	1.7	2.1
α-Hexachlorocyclohexane	µg/kg	wet	3	1	1.7	1.7	1.7	0.33	0.34	0.34
β-Endosulfan	µg/kg	wet	3	0				0.52	0.66	0.73
β-Hexachlorocyclohexane	µg/kg	wet	3	1	2.6	2.6	2.6	1.8	2	2.1
δ-Hexachlorocyclohexane	µg/kg	wet	3	2	0.88	0.91	0.94	0.71	0.71	0.71
Dieldrin	µg/kg	wet	3	3	0.68	0.81	0.9			
Endosulfan sulfate	µg/kg	wet	3	0				0.4	0.51	0.57
Endrin	µg/kg	wet	3	0				1.5	1.9	2.1
Endrin aldehyde	µg/kg	wet	3	0				0.36	1.6	2.5
Endrin ketone	µg/kg	wet	3	0				0.6	1	1.8
γ-Chlordane	µg/kg	wet	3	3	3.2	7	11			
γ-Hexachlorocyclohexane	µg/kg	wet	3	1	3.3	3.3	3.3	0.58	1	1.5
Heptachlor	µg/kg	wet	3	0				0.66	0.84	0.94
Heptachlor epoxide	µg/kg	wet	3	1	1.8	1.8	1.8	1.5	1.8	2.1
Methoxychlor	µg/kg	wet	3	0				1.5	2.2	2.6
Toxaphene	µg/kg	wet	3	0				92	180	220
Aroclor® 1016	µg/kg	wet	3	0				3	3.8	4.2
Aroclor® 1221	µg/kg	wet	3	0				4.6	5.8	6.5
Aroclor® 1232	µg/kg	wet	3	0				3	3.8	4.2
Aroclor® 1242	µg/kg	wet	3	0				5.2	6.6	7.3
Aroclor® 1248	µg/kg	wet	3	3	19	100	190			
Aroclor® 1254	µg/kg	wet	3	3	63	140	190			
Aroclor® 1260	µg/kg	wet	3	3	98	140	170			
PCBs	µg/kg	wet	3	3	180	380	550			

Note: PCB - polychlorinated biphenyl

Table D-71. 2004 inorganic analyte compound summary statistics for earthworm bioaccumulation test samples—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Aluminum	mg/kg	wet	3	3	270	492	646			
Antimony	mg/kg	wet	3	3	0.019	0.028	0.034			
Arsenic	mg/kg	wet	3	3	2.8	3.82	5.11			
Barium	mg/kg	wet	3	3	0.79	1.69	2.14			
Beryllium	mg/kg	wet	3	3	0.0071	0.022	0.032			
Cadmium	mg/kg	wet	3	3	0.3	0.7	1.1			
Chromium	mg/kg	wet	3	3	0.72	1.45	1.95			
Cobalt	mg/kg	wet	3	3	0.68	0.74	0.87			
Copper	mg/kg	wet	3	3	2.66	6.4	9.06			
Iron	mg/kg	wet	3	3	210	453	630			
Lead	mg/kg	wet	3	3	3.99	5.82	8.84			
Manganese	mg/kg	wet	3	3	1.72	7.1	13.1			
Mercury	mg/kg	wet	3	3	0.092	0.1	0.11			
Nickel	mg/kg	wet	3	3	0.29	0.74	0.97			
Selenium	mg/kg	wet	3	3	0.15	0.2	0.22			
Silver	mg/kg	wet	3	3	0.11	0.14	0.18			
Thallium	mg/kg	wet	3	3	0.0099	0.016	0.022			
Vanadium	mg/kg	wet	3	3	0.58	1.13	1.44			
Zinc	mg/kg	wet	3	3	13.1	16.3	19.1			
Calcium	mg/kg	wet	3	3	516	540	561			
Magnesium	mg/kg	wet	3	3	104	151	195			
Potassium	mg/kg	wet	3	3	1,220	1,290	1,390			
Sodium	mg/kg	wet	3	3	731	749	763			

Table D-72. 2004 conventional parameter summary statistics for earthworm bioaccumulation test samples—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Lipid	%	wet	3	3	1.2	1.2	1.3			
Total solids (dry wt. as percent of wet wt. or volume)	%	wet	3	3	11.1	11.7	12.1			

Table D-73. 2004 pesticide/PCB summary statistics for blackworm bioaccumulation test samples—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
4,4'-DDD	µg/kg	wet	8	5	0.91	2.4	3.6	0.38	2.3	3.7
4,4'-DDE	µg/kg	wet	8	4	9.2	13	17	1.9	5.1	7.8
4,4'-DDT	µg/kg	wet	8	3	1.7	17	29	2.3	70	220
Aldrin	µg/kg	wet	8	2	6.2	9	12	0.38	2.3	3.7
α-Chlordane	µg/kg	wet	8	2	2.1	2.4	2.6	0.95	4	15
α-Endosulfan	µg/kg	wet	8	1	1.2	1.2	1.2	0.29	5	25
α-Hexachlorocyclohexane	µg/kg	wet	8	3	3.1	4.4	6.4	0.46	3.1	5.5
β-Endosulfan	µg/kg	wet	8	1	12	12	12	0.67	2.4	5.5
β-Hexachlorocyclohexane	µg/kg	wet	8	0				0.6	1.9	3.7
δ-Hexachlorocyclohexane	µg/kg	wet	8	2	1.9	2.3	2.6	0.97	1.3	2.3
Dieldrin	µg/kg	wet	8	1	1.6	1.6	1.6	0.33	2.6	3.7
Endosulfan sulfate	µg/kg	wet	8	0				0.52	0.77	0.98
Endrin	µg/kg	wet	8	1	3.5	3.5	3.5	0.68	3	4.5
Endrin aldehyde	µg/kg	wet	8	1	0.48	0.48	0.48	0.5	1.6	3.7
Endrin ketone	µg/kg	wet	8	1	4.3	4.3	4.3	0.66	2.1	5.7
γ-Chlordane	µg/kg	wet	8	5	16	60	210	0.27	2.2	3.4
γ-Hexachlorocyclohexane	µg/kg	wet	8	0				0.53	1.4	3.2
Heptachlor	µg/kg	wet	8	0				0.86	1.3	1.7
Heptachlor epoxide	µg/kg	wet	8	2	16	24	32	2	3.9	5.8
Methoxychlor	µg/kg	wet	8	1	8.3	8.3	8.3	0.62	1.6	3
Toxaphene	µg/kg	wet	8	0				95	220	370
Aroclor® 1016	µg/kg	wet	8	0				3.8	12	60
Aroclor® 1221	µg/kg	wet	8	0				5.9	19	93
Aroclor® 1232	µg/kg	wet	8	0				3.8	12	60
Aroclor® 1242	µg/kg	wet	8	0				6.7	20	110
Aroclor® 1248	µg/kg	wet	8	8	3.3	900	5,600			
Aroclor® 1254	µg/kg	wet	8	8	24	1,100	5,400			
Aroclor® 1260	µg/kg	wet	8	7	37	290	620	150	150	150
PCBs	µg/kg	wet	8	8	64	2,000	11,000			

Note: PCB - polychlorinated biphenyl

Table D-74. 2004 inorganic analyte summary statistics for blackworm bioaccumulation test samples—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Aluminum	mg/kg	wet	9	9	33.6	362	707			
Antimony	mg/kg	wet	9	9	0.016	0.05	0.21			
Arsenic	mg/kg	wet	9	9	1	14.8	57.6			
Barium	mg/kg	wet	9	9	3.27	7.2	12.3			
Beryllium	mg/kg	wet	9	8	0.0048	0.014	0.025	0.003	0.003	0.003
Cadmium	mg/kg	wet	9	9	0.058	0.27	0.57			
Chromium	mg/kg	wet	9	9	0.15	1.98	4.18			
Cobalt	mg/kg	wet	9	9	0.12	0.26	0.7			
Copper	mg/kg	wet	9	9	2.34	23	49			
Iron	mg/kg	wet	9	9	236	526	791			
Lead	mg/kg	wet	9	9	0.6	4.4	15.8			
Manganese	mg/kg	wet	9	9	1.47	3.28	5.54			
Mercury	mg/kg	wet	9	9	0.062	6.2	39.2			
Nickel	mg/kg	wet	9	9	0.29	0.8	1.56			
Selenium	mg/kg	wet	9	9	0.12	0.18	0.25			
Silver	mg/kg	wet	9	9	0.035	0.73	3.16			
Thallium	mg/kg	wet	9	9	0.0036	0.012	0.033			
Vanadium	mg/kg	wet	9	9	0.22	0.8	1.6			
Zinc	mg/kg	wet	9	9	25.6	32.9	40			
Calcium	mg/kg	wet	9	9	96	219	459			
Magnesium	mg/kg	wet	9	9	64.9	126	142			
Potassium	mg/kg	wet	9	9	775	1,190	1,380			
Sodium	mg/kg	wet	9	9	501	568	622			

Table D-75. 2004 conventional parameter summary statistics for blackworm bioaccumulation test samples—Site

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Lipid	%	wet	8	8	0.9	1.1	1.4			
Total solids (dry wt. as percent of wet wt. or volume)	%	wet	9	9	8	10.8	11.9			

Table D-76. 2004 pesticide/PCB compound summary statistics for blackworm bioaccumulation test samples—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
4,4'-DDD	µg/kg	wet	3	2	0.54	0.66	0.78	1.8	1.8	1.8
4,4'-DDE	µg/kg	wet	3	1	8.3	8.3	8.3	2.8	3	3.2
4,4'-DDT	µg/kg	wet	3	1	8.2	8.2	8.2	2.8	5.4	7.9
Aldrin	µg/kg	wet	3	0				0.55	1.1	2.1
α-Chlordane	µg/kg	wet	3	1	0.67	0.67	0.67	1.7	2.2	2.6
α-Endosulfan	µg/kg	wet	3	1	2.3	2.3	2.3	0.36	1.1	1.8
α-Hexachlorocyclohexane	µg/kg	wet	3	1	7.1	7.1	7.1	1.4	2.8	4.2
β-Endosulfan	µg/kg	wet	3	0				0.61	0.82	0.96
β-Hexachlorocyclohexane	µg/kg	wet	3	0				0.53	1.8	3.6
δ-Hexachlorocyclohexane	µg/kg	wet	3	0				0.93	1.8	3.2
Dieldrin	µg/kg	wet	3	1	1.5	1.5	1.5	0.19	0.24	0.28
Endosulfan sulfate	µg/kg	wet	3	1	0.99	0.99	0.99	0.68	1.7	2.8
Endrin	µg/kg	wet	3	0				0.64	1.1	1.4
Endrin aldehyde	µg/kg	wet	3	0				0.43	0.9	1.8
Endrin ketone	µg/kg	wet	3	0				0.73	1.1	1.8
γ-Chlordane	µg/kg	wet	3	0				2.6	2.7	2.8
γ-Hexachlorocyclohexane	µg/kg	wet	3	0				0.71	1.8	2.8
Heptachlor	µg/kg	wet	3	0				1.2	1.7	2.5
Heptachlor epoxide	µg/kg	wet	3	1	1.9	1.9	1.9	2.8	2.9	3
Methoxychlor	µg/kg	wet	3	0				0.68	3.3	6.9
Toxaphene	µg/kg	wet	3	0				100	110	130
Aroclor® 1016	µg/kg	wet	3	0				3.5	4.7	5.5
Aroclor® 1221	µg/kg	wet	3	0				5.4	7.2	8.5
Aroclor® 1232	µg/kg	wet	3	0				3.5	4.7	5.5
Aroclor® 1242	µg/kg	wet	3	0				6.1	8.2	9.6
Aroclor® 1248	µg/kg	wet	3	3	14	31	58			
Aroclor® 1254	µg/kg	wet	3	2	66	82	98	23	23	23
Aroclor® 1260	µg/kg	wet	3	3	68	80	100			
PCBs	µg/kg	wet	3	3	82	170	260			

Note: PCB - polychlorinated biphenyl

Table D-77. 2004 inorganic analyte compound summary statistics for blackworm bioaccumulation test samples—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Aluminum	mg/kg	wet	3	3	300	428	542			
Antimony	mg/kg	wet	3	3	0.032	0.035	0.038			
Arsenic	mg/kg	wet	3	3	2	3.45	5.7			
Barium	mg/kg	wet	3	3	6.19	7.9	10.4			
Beryllium	mg/kg	wet	3	3	0.0079	0.023	0.037			
Cadmium	mg/kg	wet	3	3	0.069	0.5	1			
Chromium	mg/kg	wet	3	3	0.56	1.2	1.67			
Cobalt	mg/kg	wet	3	3	0.1	0.42	0.73			
Copper	mg/kg	wet	3	3	4.12	24.3	40.2			
Iron	mg/kg	wet	3	3	323	520	651			
Lead	mg/kg	wet	3	3	3.26	5.42	7.93			
Manganese	mg/kg	wet	3	3	1.48	6.6	11.8			
Mercury	mg/kg	wet	3	3	0.17	0.8	1.3			
Nickel	mg/kg	wet	3	3	0.26	0.7	1			
Selenium	mg/kg	wet	3	3	0.11	0.13	0.16			
Silver	mg/kg	wet	3	3	0.066	0.22	0.44			
Thallium	mg/kg	wet	3	3	0.0041	0.018	0.029			
Vanadium	mg/kg	wet	3	3	0.75	1.1	1.44			
Zinc	mg/kg	wet	3	3	27.5	37.7	46.5			
Calcium	mg/kg	wet	3	3	202	279	345			
Magnesium	mg/kg	wet	3	3	127	158	177			
Potassium	mg/kg	wet	3	3	1,280	1,320	1,390			
Sodium	mg/kg	wet	3	3	625	636	657			

Table D-78. 2004 conventional parameter summary statistics for blackworm bioaccumulation test samples—Reference

Analyte	Concen-tration Units	Measure-ment Basis	Number of Analyses	Number of Detected Values	Minimum Detected Value	Mean Detected Value	Maximum Detected Value	Minimum Undetected Value	Mean Undetected Value	Maximum Undetected Value
Lipid	%	wet	3	3	0.65	1	1.2			
Total solids (dry wt. as percent of wet wt. or volume)	%	wet	3	3	11	11.8	13			

Appendix E

Chemical Data from Historical Investigations (CD-ROM)

Contents

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	1,1,1-Trichloroethane (µg/kg dry)	1,1,2,2-Tetrachloro-ethane (µg/kg dry)	1,1,2-Trichloroethane (µg/kg dry)	1,1-Dichloroethane (µg/kg dry)	1,1-Dichloroethene (µg/kg dry)	1,2,4-Trichloro-benzene (µg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	29	29	29	29	29	29
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	14 *UJ*	14 *UJ*	14 *UJ*	14 *UJ*	14 *UJ*	14 *UJ*
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	16 *UJ*	16 *UJ*	16 *UJ*	16 *UJ*	16 *UJ*	16 *UJ*
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	39 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	33 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	37 *UJ*	37 *UJ*	37 *UJ*	37 *UJ*	37 *UJ*	37 *UJ*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	33 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	69 *UJ*	69 *UJ*	69 *UJ*	69 *UJ*	69 *UJ*	69 *UJ*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	38 *UJ*	38 *UJ*	38 *UJ*	38 *UJ*	38 *UJ*	38 *UJ*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	84 *UJ*	84 *UJ*	84 *UJ*	84 *UJ*	84 *UJ*	84 *UJ*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6	39 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	33 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	38 *UJ*	38 *UJ*	38 *UJ*	38 *UJ*	38 *UJ*	38 *UJ*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	36 *UJ*	36 *UJ*	36 *UJ*	36 *UJ*	36 *UJ*	36 *UJ*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	31 *UJ*	31 *UJ*	31 *UJ*	31 *UJ*	31 *UJ*	31 *UJ*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	27 *U*	27 *U*	27 *U*	27 *U*	27 *U*	27 *U*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	1,1,1-Trichloroethane (µg/kg dry)	1,1,2,2-Tetrachloro-ethane (µg/kg dry)	1,1,2-Trichloroethane (µg/kg dry)	1,1-Dichloroethane (µg/kg dry)	1,1-Dichloroethene (µg/kg dry)	1,2,4-Trichloro-benzene (µg/kg dry)
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	34 *U*	34 *U*	34 *U*	34 *U*	34 *U*	34 *U*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*	1.0 *J*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	26 *U*	26 *U*	26 *U*	26 *U*	26 *U*	2.0 *J*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	23 *U*	23 *U*	23 *U*	23 *U*	23 *U*	23 *U*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	29 *U*	29 *U*	29 *U*	29 *U*	29 *U*	29 *U*
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	22 *U*	22 *U*	22 *U*	22 *U*	22 *U*	22 *U*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	24 *U*	24 *U*	24 *U*	24 *U*	24 *U*	24 *U*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	30 *UJ*	30 *UJ*	30 *UJ*	30 *UJ*	30 *UJ*	30 *UJ*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	2.0 *J*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	16 *U*	16 *U*	16 *U*	16 *U*	16 *U*	16 *U*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	18 *U*	18 *U*	18 *U*	18 *U*	18 *U*	18 *U*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	42 *UJ*	42 *UJ*	42 *UJ*	42 *UJ*	42 *UJ*	42 *UJ*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	18 *U*	18 *U*	18 *U*	18 *U*	18 *U*	18 *U*
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	13 *U*	13 *U*	13 *U*	13 *U*	13 *U*	13 *U*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	31 *UJ*	31 *UJ*	31 *UJ*	31 *UJ*	31 *UJ*	31 *UJ*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	18 *U*	18 *U*	18 *U*	18 *U*	18 *U*	18 *U*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	22 *U*	22 *U*	22 *U*	22 *U*	22 *U*	22 *U*
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	27 *U*	27 *U*	27 *U*	27 *U*	27 *U*	27 *U*
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	1.0 *J*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	17 *UJ*	17 *UJ*	17 *UJ*	17 *UJ*	17 *UJ*	17 *UJ*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	22 *U*	22 *U*	22 *U*	22 *U*	22 *U*	22 *U*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	22 *U*	22 *U*	22 *U*	22 *U*	22 *U*	22 *U*
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	39 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	36 *UJ*	36 *UJ*	36 *UJ*	36 *UJ*	36 *UJ*	36 *UJ*
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	31 *UJ*	31 *UJ*	31 *UJ*	31 *UJ*	31 *UJ*	31 *UJ*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	1,1,1-Trichloroethane (µg/kg dry)	1,1,2,2-Tetrachloro-ethane (µg/kg dry)	1,1,2-Trichloroethane (µg/kg dry)	1,1-Dichloroethane (µg/kg dry)	1,1-Dichloroethene (µg/kg dry)	1,2,4-Trichloro-benzene (µg/kg dry)
SD01	Ruplnd	10/23/1997	SD01	0	0	0	16 *U*	16 *U*	16 *U*	16 *U*	16 *U*	
SD02	Ruplnd	10/24/1997	SD02	0	0	0	14 *U*	14 *U*	14 *U*	14 *U*	14 *U*	
SD03	upland	10/23/1997	SD03	0	0	0	18 *U*	18 *U*	18 *U*	18 *U*	18 *U*	
SD04	upland	10/24/1997	SD04	0	0	0	18 *U*	18 *U*	18 *U*	18 *U*	18 *U*	
SD05	upland	10/23/1997	SD05	0	0	0	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*	
SD06	upland	10/23/1997	SD06	0	0	0	56 *UJ*	56 *UJ*	56 *UJ*	56 *UJ*	56 *UJ*	
SD07	upland	10/23/1997	SD07	0	0	0	31 *UJ*	31 *UJ*	31 *UJ*	31 *UJ*	31 *UJ*	
SD08	upland	10/23/1997	SD08	0	0	0	16 *U*	16 *U*	16 *U*	16 *U*	16 *U*	
SD09	upland	10/28/1997	SD09	0	0	0	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	
SD10	upland	10/28/1997	SD10	0	0	0	38 *UJ*	38 *UJ*	38 *UJ*	38 *UJ*	38 *UJ*	
SD11	upland	10/28/1997	SD11	0	0	0	48 *UJ*	48 *UJ*	48 *UJ*	48 *UJ*	48 *UJ*	
SD12	upland	10/28/1997	SD12	0	0	0	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	
SD13	upland	10/27/1997	SD13	0	0	0	16 *U*	16 *U*	16 *U*	16 *U*	16 *U*	
SD14	upland	10/27/1997	SD14	0	0	0	19 *U*	19 *U*	19 *U*	19 *U*	19 *U*	
SD15	upland	10/24/1997	SD15	0	0	0	12 *U*	12 *U*	12 *U*	12 *U*	12 *U*	
SD16	upland	10/27/1997	SD16	0	0	0	17 *U*	17 *U*	17 *U*	2.0 *J*	17 *U*	
SD17	upland	10/27/1997	SD17	0	0	0	20 *U*	20 *U*	20 *U*	20 *U*	20 *U*	
SD18	upland	10/29/1997	SD18	0	0	0	18 *U*	18 *U*	18 *U*	18 *U*	18 *U*	
SD19	upland	10/24/1997	SD19	0	0	0	12 *U*	12 *U*	12 *U*	12 *U*	12 *U*	
SD20	upland	10/24/1997	SD20	A	0	0	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	
SD20	upland	10/24/1997	SD20	B	0	0	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	
SD21	Ruplnd	10/24/1997	SD21	0	0	0	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	
SD22	upland	10/24/1997	SD22	0	0	0	12 *U*	12 *U*	12 *U*	12 *U*	12 *U*	
SD23	upland	10/24/1997	SD23	0	0	0	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	
SD24	river	10/27/1997	SD24	0	0	0	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	
SD25	river	10/29/1997	SD25	0	0	0	30 *UJ*	30 *UJ*	30 *UJ*	30 *UJ*	30 *UJ*	
SD26	marsh	10/29/1997	SD26	0	0	0	59 *UJ*	59 *UJ*	59 *UJ*	59 *UJ*	59 *UJ*	
SD27	river	10/30/1997	SD27	0	0	0	38 *UJ*	38 *UJ*	38 *UJ*	38 *UJ*	38 *UJ*	
SD28	upland	10/28/1997	SD28	0	0	0	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	
SD29	upland	10/27/1997	SD29	0	0	0	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*	
SD30	upland	10/29/1997	SD30	0	0	0	14 *U*	14 *U*	14 *U*	14 *U*	14 *U*	
SD31	river	10/30/1997	SD31	0	0	0	30 *UJ*	30 *UJ*	30 *UJ*	30 *UJ*	30 *UJ*	
SD32	upland	10/28/1997	SD32	0	0	0	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	
SD33	marsh	10/28/1997	SD33	0	0	0	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	
SD34	upland	10/30/1997	SD34	0	0	0	18 *U*	18 *U*	18 *U*	18 *U*	18 *U*	
SD35	marsh	10/30/1997	SD35	0	0	0	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	
SD36	marsh	10/30/1997	SD36	0	0	0	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*	
SD37	marsh	10/30/1997	SD37	A	0	0	12 *U*	12 *U*	12 *U*	12 *U*	12 *U*	
SD37	marsh	10/30/1997	SD37	B	0	0	12 *UJ*	12 *UJ*	12 *UJ*	12 *UJ*	12 *UJ*	
SD38	river	6/24/1998	SD38	0	0	0	33 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*	
SD39	river	6/24/1998	SD39	A	0	0	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	
SD39	river	6/24/1998	SD39	B	0	0	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	1,1,1-Trichloroethane (µg/kg dry)	1,1,2,2-Tetrachloro-ethane (µg/kg dry)	1,1,2-Trichloroethane (µg/kg dry)	1,1-Dichloroethane (µg/kg dry)	1,1-Dichloroethene (µg/kg dry)	1,2,4-Trichloro-benzene (µg/kg dry)
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	11 *J*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	8.0 *J*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	17 *UJ*	17 *UJ*	17 *UJ*	17 *UJ*	17 *UJ*	17 *UJ*
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	94 *UJ*	94 *UJ*	94 *UJ*	94 *UJ*	94 *UJ*	94 *UJ*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	96 *UJ*	96 *UJ*	96 *UJ*	96 *UJ*	96 *UJ*	96 *UJ*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	68 *UJ*	68 *UJ*	68 *UJ*	68 *UJ*	68 *UJ*	68 *UJ*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	4.0 *J*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	42 *UJ*	42 *UJ*	42 *UJ*	42 *UJ*	42 *UJ*	42 *UJ*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	13 *UJ*	13 *UJ*	13 *UJ*	13 *UJ*	13 *UJ*	6.0 *J*
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	36 *UJ*	36 *UJ*	36 *UJ*	36 *UJ*	36 *UJ*	36 *UJ*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	1,1,1-Trichloroethane (µg/kg dry)	1,1,2,2-Tetrachloro-ethane (µg/kg dry)	1,1,2-Trichloroethane (µg/kg dry)	1,1-Dichloroethane (µg/kg dry)	1,1-Dichloroethene (µg/kg dry)	1,2,4-Trichloro-benzene (µg/kg dry)
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	4,400 *J*
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6		19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*

Note:
Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	1,2,4-Trichloro-benzene (µg/kg dry)	1,2-Dibromo-3-chloropropane (µg/kg dry)	1,2-Dibromoethane (µg/kg dry)	1,2-Dichloro-benzene (µg/kg dry)	1,2-Dichloro-benzene (µg/kg dry)	1,2-Dichloroethane (µg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6		26 *UJ*	26 *UJ*	26 *UJ*		26 *UJ*
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30		29 *UJ*	29 *UJ*	29 *UJ*		29 *UJ*
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42		27 *UJ*	27 *UJ*	27 *UJ*		27 *UJ*
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18		29	29	29		29
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6		14 *UJ*	14 *UJ*	14 *UJ*		14 *UJ*
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30		19 *UJ*	19 *UJ*	19 *UJ*		19 *UJ*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42		16 *UJ*	16 *UJ*	16 *UJ*		16 *UJ*
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18		18 *UJ*	18 *UJ*	18 *UJ*		18 *UJ*
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6		32 *UJ*	32 *UJ*	32 *UJ*		32 *UJ*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30		35 *UJ*	35 *UJ*	35 *UJ*		35 *UJ*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42		34 *UJ*	34 *UJ*	34 *UJ*		34 *UJ*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18		39 *UJ*	39 *UJ*	39 *UJ*		39 *UJ*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6		34 *UJ*	34 *UJ*	34 *UJ*		34 *UJ*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30		35 *UJ*	35 *UJ*	35 *UJ*		35 *UJ*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42		28 *UJ*	28 *UJ*	28 *UJ*		28 *UJ*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18		33 *UJ*	33 *UJ*	33 *UJ*		33 *UJ*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6		21 *UJ*	21 *UJ*	21 *UJ*		21 *UJ*
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30		28 *UJ*	28 *UJ*	28 *UJ*		28 *UJ*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42		28 *UJ*	28 *UJ*	28 *UJ*		28 *UJ*
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18		27 *UJ*	27 *UJ*	27 *UJ*		27 *UJ*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6		37 *UJ*	37 *UJ*	37 *UJ*		37 *UJ*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30		33 *UJ*	33 *UJ*	33 *UJ*		33 *UJ*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42		35 *UJ*	35 *UJ*	35 *UJ*		35 *UJ*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18		45 *UJ*	45 *UJ*	45 *UJ*		45 *UJ*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6		69 *UJ*	69 *UJ*	69 *UJ*		69 *UJ*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30		27 *UJ*	27 *UJ*	27 *UJ*		27 *UJ*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42		26 *UJ*	26 *UJ*	26 *UJ*		26 *UJ*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18		38 *UJ*	38 *UJ*	38 *UJ*		38 *UJ*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6		84 *UJ*	84 *UJ*	84 *UJ*		84 *UJ*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30		35 *UJ*	35 *UJ*	35 *UJ*		35 *UJ*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42		26 *UJ*	26 *UJ*	26 *UJ*		26 *UJ*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18		35 *UJ*	35 *UJ*	35 *UJ*		35 *UJ*
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6		39 *UJ*	39 *UJ*	39 *UJ*		39 *UJ*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30		33 *UJ*	33 *UJ*	33 *UJ*		33 *UJ*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42		32 *UJ*	32 *UJ*	32 *UJ*		32 *UJ*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18		38 *UJ*	38 *UJ*	38 *UJ*		38 *UJ*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6		36 *UJ*	36 *UJ*	36 *UJ*		36 *UJ*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30		29 *UJ*	29 *UJ*	29 *UJ*		29 *UJ*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42		28 *UJ*	28 *UJ*	28 *UJ*		28 *UJ*
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18		31 *UJ*	31 *UJ*	31 *UJ*		31 *UJ*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6		45 *UJ*	45 *UJ*	45 *UJ*		45 *UJ*
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30		27 *U*	27 *U*	27 *U*		27 *U*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	1,2,4-Trichloro-benzene (µg/kg dry)	1,2-Dibromo-3-chloropropane (µg/kg dry)	1,2-Dibromoethane (µg/kg dry)	1,2-Dichloro-benzene (µg/kg dry)	1,2-Dichloro-benzene (µg/kg dry)	1,2-Dichloroethane (µg/kg dry)
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42		34 *U*	34 *U*	34 *U*		34 *U*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18		27 *UJ*	27 *UJ*	27 *UJ*		27 *UJ*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6		35 *UJ*	35 *UJ*	35 *UJ*		35 *UJ*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30		23 *UJ*	23 *UJ*	23 *UJ*		23 *UJ*
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42		22 *UJ*	22 *UJ*	22 *UJ*		22 *UJ*
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18		28 *UJ*	28 *UJ*	28 *UJ*		28 *UJ*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6		1.0 *J*	26 *U*	26 *U*		26 *U*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30		23 *UJ*	23 *U*	23 *U*		23 *U*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42		29 *U*	29 *U*	29 *U*		29 *U*
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18		25 *UJ*	25 *UJ*	25 *UJ*		25 *UJ*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6		45 *UJ*	45 *UJ*	45 *UJ*		45 *UJ*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30		22 *U*	22 *U*	22 *U*		22 *U*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42		24 *U*	24 *U*	24 *U*		24 *U*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18		30 *UJ*	30 *UJ*	30 *UJ*		30 *UJ*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6		26 *UJ*	26 *UJ*	26 *UJ*		26 *UJ*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30		35 *UJ*	35 *UJ*	35 *UJ*		35 *UJ*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42		1.0 *J*	35 *UJ*	1.0 *J*		35 *UJ*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18		34 *UJ*	34 *UJ*	1.0 *J*		34 *UJ*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6		45 *UJ*	45 *UJ*	45 *UJ*		45 *UJ*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30		16 *U*	16 *U*	16 *U*		16 *U*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42		18 *U*	18 *U*	18 *U*		18 *U*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18		24 *UJ*	24 *UJ*	24 *UJ*		24 *UJ*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6		42 *UJ*	42 *UJ*	42 *UJ*		42 *UJ*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30		18 *U*	18 *U*	18 *U*		18 *U*
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42		13 *U*	13 *U*	13 *U*		13 *U*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18		31 *UJ*	31 *UJ*	31 *UJ*		31 *UJ*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6		18 *U*	18 *U*	18 *U*		18 *U*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30		22 *U*	22 *U*	22 *U*		22 *U*
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42		27 *U*	27 *U*	27 *U*		27 *U*
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18		24 *UJ*	24 *UJ*	24 *UJ*		24 *UJ*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6		17 *UJ*	17 *UJ*	17 *UJ*		17 *UJ*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30		22 *U*	22 *U*	22 *U*		22 *U*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42		22 *U*	22 *U*	22 *U*		22 *U*
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18		21 *UJ*	21 *UJ*	21 *UJ*		21 *UJ*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6		39 *UJ*	39 *UJ*	39 *UJ*		39 *UJ*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30		36 *UJ*	36 *UJ*	36 *UJ*		36 *UJ*
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42		31 *UJ*	31 *UJ*	31 *UJ*		31 *UJ*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18		28 *UJ*	28 *UJ*	28 *UJ*		28 *UJ*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6		32 *UJ*	32 *UJ*	32 *UJ*		32 *UJ*
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30		35 *UJ*	35 *UJ*	35 *UJ*		35 *UJ*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42		29 *UJ*	29 *UJ*	29 *UJ*		29 *UJ*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18		32 *UJ*	32 *UJ*	32 *UJ*		32 *UJ*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	1,2,4-Trichloro-benzene (µg/kg dry)	1,2-Dibromo-3-chloropropane (µg/kg dry)	1,2-Dibromoethane (µg/kg dry)	1,2-Dichloro-benzene (µg/kg dry)	1,2-Dichloro-benzene (µg/kg dry)	1,2-Dichloroethane (µg/kg dry)
SD01	Ruplnd	10/23/1997	SD01	0	0	0	520 *U*				520 *U*	16 *U*
SD02	Ruplnd	10/24/1997	SD02	0	0	0	470 *U*				470 *U*	14 *U*
SD03	upland	10/23/1997	SD03	0	0	0	580 *U*				580 *U*	18 *U*
SD04	upland	10/24/1997	SD04	0	0	0	600 *U*				600 *U*	18 *U*
SD05	upland	10/23/1997	SD05	0	0	0	1,000 *U*				1,000 *U*	15 *U*
SD06	upland	10/23/1997	SD06	0	0	0	1,700 *UJ*				1,700 *UJ*	20 *J*
SD07	upland	10/23/1997	SD07	0	0	0	1,300 *J*				5,000 *UJ*	31 *UJ*
SD08	upland	10/23/1997	SD08	0	0	0	37,000				4,100 *J*	16 *U*
SD09	upland	10/28/1997	SD09	0	0	0	170 *J*				820 *UJ*	25 *UJ*
SD10	upland	10/28/1997	SD10	0	0	0	360 *J*				1,300 *UJ*	38 *UJ*
SD11	upland	10/28/1997	SD11	0	0	0	1,100 *J*				1,600 *UJ*	48 *UJ*
SD12	upland	10/28/1997	SD12	0	0	0	130 *J*				1,100 *UJ*	32 *UJ*
SD13	upland	10/27/1997	SD13	0	0	0	140 *J*				520 *U*	16 *U*
SD14	upland	10/27/1997	SD14	0	0	0	82 *J*				620 *U*	19 *U*
SD15	upland	10/24/1997	SD15	0	0	0	140 *J*				380 *U*	12 *U*
SD16	upland	10/27/1997	SD16	0	0	0	550 *U*				550 *U*	17 *U*
SD17	upland	10/27/1997	SD17	0	0	0	650 *U*				650 *U*	20 *U*
SD18	upland	10/29/1997	SD18	0	0	0	600 *UJ*				600 *UJ*	18 *U*
SD19	upland	10/24/1997	SD19	0	0	0	400 *U*				400 *U*	12 *U*
SD20	upland	10/24/1997	SD20	A	0	0	11,000 *UJ*				11,000 *UJ*	11 *U*
SD20	upland	10/24/1997	SD20	B	0	0	11,000 *UJ*				11,000 *UJ*	11 *U*
SD21	Ruplnd	10/24/1997	SD21	0	0	0	370 *U*				370 *U*	11 *U*
SD22	upland	10/24/1997	SD22	0	0	0	530				400 *U*	12 *U*
SD23	upland	10/24/1997	SD23	0	0	0	380 *U*				380 *U*	11 *U*
SD24	river	10/27/1997	SD24	0	0	0	970 *UJ*				970 *UJ*	29 *UJ*
SD25	river	10/29/1997	SD25	0	0	0	1,000 *UJ*				1,000 *UJ*	30 *UJ*
SD26	marsh	10/29/1997	SD26	0	0	0	1,900 *UJ*				1,900 *UJ*	59 *UJ*
SD27	river	10/30/1997	SD27	0	0	0	1,300 *UJ*				1,300 *UJ*	38 *UJ*
SD28	upland	10/28/1997	SD28	0	0	0	940 *UJ*				940 *UJ*	28 *UJ*
SD29	upland	10/27/1997	SD29	0	0	0	74 *J*				480 *U*	15 *U*
SD30	upland	10/29/1997	SD30	0	0	0	480 *UJ*				480 *UJ*	14 *U*
SD31	river	10/30/1997	SD31	0	0	0	1,000 *UJ*				1,000 *UJ*	30 *UJ*
SD32	upland	10/28/1997	SD32	0	0	0	700 *UJ*				700 *UJ*	21 *UJ*
SD33	marsh	10/28/1997	SD33	0	0	0	850 *UJ*				850 *UJ*	26 *UJ*
SD34	upland	10/30/1997	SD34	0	0	0	580 *U*				580 *U*	18 *U*
SD35	marsh	10/30/1997	SD35	0	0	0	750 *UJ*				750 *UJ*	23 *UJ*
SD36	marsh	10/30/1997	SD36	0	0	0	400 *J*				480 *U*	15 *U*
SD37	marsh	10/30/1997	SD37	A	0	0	1,200				390 *U*	12 *U*
SD37	marsh	10/30/1997	SD37	B	0	0	1,800				400 *U*	12 *UJ*
SD38	river	6/24/1998	SD38	0	0	0	1,000 *UJ*				1,000 *UJ*	33 *UJ*
SD39	river	6/24/1998	SD39	A	0	0	4,300 *UJ*				4,300 *UJ*	28 *UJ*
SD39	river	6/24/1998	SD39	B	0	0	4,500 *UJ*				4,500 *UJ*	29 *UJ*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	1,2,4-Trichloro-benzene (µg/kg dry)	1,2-Dibromo-3-chloropropane (µg/kg dry)	1,2-Dibromoethane (µg/kg dry)	1,2-Dichloro-benzene (µg/kg dry)	1,2-Dichloro-benzene (µg/kg dry)	1,2-Dichloroethane (µg/kg dry)
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6		29 *UJ*	29 *UJ*	29 *UJ*		29 *UJ*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30		22 *UJ*	22 *UJ*	22 *UJ*		22 *UJ*
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42		23 *UJ*	23 *UJ*	23 *UJ*		23 *UJ*
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18		23 *UJ*	23 *UJ*	23 *UJ*		23 *UJ*
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6		32 *UJ*	32 *UJ*	32 *UJ*		32 *UJ*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30		22 *UJ*	22 *UJ*	22 *UJ*		22 *UJ*
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42		18 *UJ*	18 *UJ*	18 *UJ*		18 *UJ*
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18		25 *UJ*	25 *UJ*	25 *UJ*		25 *UJ*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6		57 *UJ*	57 *UJ*	57 *UJ*		57 *UJ*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30		23 *UJ*	23 *UJ*	23 *UJ*		23 *UJ*
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42		23 *UJ*	23 *UJ*	23 *UJ*		23 *UJ*
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18		18 *UJ*	18 *UJ*	18 *UJ*		18 *UJ*
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6		32 *UJ*	32 *UJ*	32 *UJ*		32 *UJ*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30		24 *UJ*	24 *UJ*	24 *UJ*		24 *UJ*
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42		23 *UJ*	23 *UJ*	23 *UJ*		23 *UJ*
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18		22 *UJ*	22 *UJ*	22 *UJ*		22 *UJ*
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6		20 *UJ*	20 *UJ*	20 *UJ*		20 *UJ*
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30		20 *UJ*	20 *UJ*	20 *UJ*		20 *UJ*
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42		23 *UJ*	23 *UJ*	23 *UJ*		23 *UJ*
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18		22 *UJ*	22 *UJ*	22 *UJ*		22 *UJ*
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6		28 *UJ*	28 *UJ*	28 *UJ*		28 *UJ*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30		24 *UJ*	24 *UJ*	24 *UJ*		24 *UJ*
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42		26 *UJ*	26 *UJ*	26 *UJ*		26 *UJ*
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18		21 *UJ*	21 *UJ*	21 *UJ*		21 *UJ*
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6		15 *UJ*	15 *UJ*	15 *UJ*		15 *UJ*
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30		20 *UJ*	20 *UJ*	20 *UJ*		20 *UJ*
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42		18 *UJ*	18 *UJ*	18 *UJ*		18 *UJ*
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18		17 *UJ*	17 *UJ*	17 *UJ*		17 *UJ*
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6		94 *UJ*	94 *UJ*	94 *UJ*		94 *UJ*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30		25 *UJ*	25 *UJ*	25 *UJ*		25 *UJ*
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42		23 *UJ*	23 *UJ*	23 *UJ*		23 *UJ*
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18		34 *UJ*	34 *UJ*	34 *UJ*		34 *UJ*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6		96 *UJ*	96 *UJ*	96 *UJ*		96 *UJ*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30		25 *UJ*	25 *UJ*	25 *UJ*		25 *UJ*
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42		22 *UJ*	22 *UJ*	22 *UJ*		22 *UJ*
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18		68 *UJ*	68 *UJ*	68 *UJ*		68 *UJ*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6		24 *UJ*	24 *UJ*	24 *UJ*		24 *UJ*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30		19 *UJ*	19 *UJ*	19 *UJ*		19 *UJ*
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42		21 *UJ*	21 *UJ*	21 *UJ*		21 *UJ*
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18		42 *UJ*	42 *UJ*	42 *UJ*		42 *UJ*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6		13 *UJ*	13 *UJ*	13 *UJ*		13 *UJ*
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30		36 *UJ*	36 *UJ*	36 *UJ*		36 *UJ*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	1,2,4-Trichloro-benzene (µg/kg dry)	1,2-Dibromo-3-chloropropane (µg/kg dry)	1,2-Dibromoethane (µg/kg dry)	1,2-Dichloro-benzene (µg/kg dry)	1,2-Dichloro-benzene (µg/kg dry)	1,2-Dichloroethane (µg/kg dry)
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42		26 *UJ*	26 *UJ*	26 *UJ*		26 *UJ*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18		22 *UJ*	22 *UJ*	22 *UJ*		22 *UJ*
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6		19 *UJ*	19 *UJ*	19 *UJ*		19 *UJ*
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30		20 *UJ*	20 *UJ*	20 *UJ*		20 *UJ*
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42		15 *UJ*	15 *UJ*	15 *UJ*		15 *UJ*
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18		19 *UJ*	19 *UJ*	19 *UJ*		19 *UJ*

Note: Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	1,2-Dichloro-propane (µg/kg dry)	1,3-Dichloro-benzene (µg/kg dry)	1,3-Dichloro-benzene (µg/kg dry)	1,4-Dichloro-benzene (µg/kg dry)	1,4-Dichloro-benzene (µg/kg dry)	2-Butanone (µg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	26 *UJ*	26 *UJ*		26 *UJ*		61 *J*
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	29 *UJ*	29 *UJ*		29 *UJ*		29 *UJ*
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	27 *UJ*	27 *UJ*		27 *UJ*		27 *UJ*
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	29	29		29		29
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	14 *UJ*	14 *UJ*		14 *UJ*		14 *UJ*
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	19 *UJ*	19 *UJ*		19 *UJ*		19 *UJ*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	16 *UJ*	16 *UJ*		16 *UJ*		21 *UJ*
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	18 *UJ*	18 *UJ*		18 *UJ*		18 *UJ*
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	32 *UJ*	32 *UJ*		32 *UJ*		32 *UJ*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	35 *UJ*	35 *UJ*		35 *UJ*		35 *UJ*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	34 *UJ*	34 *UJ*		34 *UJ*		34 *UJ*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	39 *UJ*	39 *UJ*		39 *UJ*		39 *UJ*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	34 *UJ*	34 *UJ*		34 *UJ*		73 *U*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	35 *UJ*	35 *UJ*		35 *UJ*		35 *UJ*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	28 *UJ*	28 *UJ*		28 *UJ*		42 *UJ*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	33 *UJ*	33 *UJ*		33 *UJ*		67 *UJ*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	21 *UJ*	21 *UJ*		21 *UJ*		21 *UJ*
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	28 *UJ*	28 *UJ*		28 *UJ*		28 *UJ*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	28 *UJ*	28 *UJ*		28 *UJ*		28 *UJ*
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	27 *UJ*	27 *UJ*		27 *UJ*		27 *UJ*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	37 *UJ*	37 *UJ*		37 *UJ*		37 *UJ*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	33 *UJ*	33 *UJ*		33 *UJ*		40 *J*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	35 *UJ*	35 *UJ*		35 *UJ*		35 *UJ*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	45 *UJ*	45 *UJ*		45 *UJ*		45 *UJ*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	69 *UJ*	69 *UJ*		69 *UJ*		120 *UJ*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	27 *UJ*	27 *UJ*		27 *UJ*		27 *UJ*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	26 *UJ*	26 *UJ*		26 *UJ*		39 *UJ*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	38 *UJ*	38 *UJ*		38 *UJ*		38 *UJ*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	84 *UJ*	84 *UJ*		84 *UJ*		150 *J*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	35 *UJ*	35 *UJ*		35 *UJ*		56 *UJ*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	26 *UJ*	26 *UJ*		26 *UJ*		26 *UJ*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	35 *UJ*	35 *UJ*		35 *UJ*		47 *UJ*
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6	39 *UJ*	39 *UJ*		39 *UJ*		57 *J*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	33 *UJ*	33 *UJ*		33 *UJ*		120 *J*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	32 *UJ*	32 *UJ*		32 *UJ*		62 *J*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	38 *UJ*	38 *UJ*		38 *UJ*		36 *J*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	36 *UJ*	36 *UJ*		36 *UJ*		100 *J*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	29 *UJ*	29 *UJ*		29 *UJ*		48 *J*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	28 *UJ*	28 *UJ*		28 *UJ*		62 *J*
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	31 *UJ*	31 *UJ*		31 *UJ*		35 *J*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	45 *UJ*	45 *UJ*		45 *UJ*		58 *J*
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	27 *U*	27 *U*		27 *U*		39

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	1,2-Dichloro-propane (µg/kg dry)	1,3-Dichloro-benzene (µg/kg dry)	1,3-Dichloro-benzene (µg/kg dry)	1,4-Dichloro-benzene (µg/kg dry)	1,4-Dichloro-benzene (µg/kg dry)	2-Butanone (µg/kg dry)
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	34 *U*	34 *U*		34 *U*		73
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	27 *UJ*	27 *UJ*		27 *UJ*		58 *J*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	35 *UJ*	35 *UJ*		35 *UJ*		35 *UJ*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	23 *UJ*	23 *UJ*		23 *UJ*		23 *UJ*
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	22 *UJ*	22 *UJ*		22 *UJ*		22 *UJ*
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	28 *UJ*	28 *UJ*		28 *UJ*		26 *J*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	26 *U*	26 *U*		1.0 *J*		55 *J*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	23 *U*	23 *U*		23 *U*		62 *J*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	29 *U*	29 *U*		29 *U*		60
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	25 *UJ*	25 *UJ*		25 *UJ*		69 *J*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	45 *UJ*	45 *UJ*		45 *UJ*		95 *J*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	22 *U*	22 *U*		22 *U*		41 *U*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	24 *U*	24 *U*		24 *U*		48 *U*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	30 *UJ*	30 *UJ*		30 *UJ*		160 *J*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	26 *UJ*	26 *UJ*		26 *UJ*		26 *UJ*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	35 *UJ*	1.0 *J*		2.0 *J*		72 *J*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	35 *UJ*	2.0 *J*		3.0 *J*		240 *J*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	34 *UJ*	2.0 *J*		3.0 *J*		97 *J*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	45 *UJ*	2.0 *J*		4.0 *J*		160 *J*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	16 *U*	16 *U*		16 *U*		22 *U*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	18 *U*	18 *U*		18 *U*		37 *U*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	24 *UJ*	24 *UJ*		24 *UJ*		41 *UJ*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	42 *UJ*	4.0 *J*		7.0 *J*		160 *J*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	18 *U*	18 *U*		18 *U*		34 *U*
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	13 *U*	13 *U*		13 *U*		25 *U*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	31 *UJ*	31 *UJ*		31 *UJ*		100 *UJ*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	18 *U*	18 *U*		18 *U*		13 *J*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	22 *U*	22 *U*		22 *U*		17 *J*
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	27 *U*	27 *U*		27 *U*		28
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	24 *UJ*	24 *UJ*		24 *UJ*		67 *J*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	17 *UJ*	17 *UJ*		17 *UJ*		35 *J*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	22 *U*	22 *U*		22 *U*		42 *J*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	22 *U*	22 *U*		22 *U*		38
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	21 *UJ*	21 *UJ*		21 *UJ*		38 *J*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	39 *UJ*	1.0 *J*		3.0 *J*		42 *UJ*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	36 *UJ*	1.0 *J*		2.0 *J*		140 *J*
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	31 *UJ*	31 *UJ*		2.0 *J*		72 *J*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	28 *UJ*	1.0 *J*		4.0 *J*		29 *UJ*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	32 *UJ*	3.0 *J*		8.0 *J*		39 *UJ*
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	35 *UJ*	7.0 *J*		11 *J*		140 *J*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	29 *UJ*	1.0 *J*		2.0 *J*		83 *J*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	32 *UJ*	7.0 *J*		16 *J*		42 *UJ*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	1,2-Dichloro-propane (µg/kg dry)	1,3-Dichloro-benzene (µg/kg dry)	1,3-Dichloro-benzene (µg/kg dry)	1,4-Dichloro-benzene (µg/kg dry)	1,4-Dichloro-benzene (µg/kg dry)	2-Butanone (µg/kg dry)
SD01	Ruplnd	10/23/1997	SD01	0	0	0	16 *U*		520 *U*		520 *U*	16 *UJ*
SD02	Ruplnd	10/24/1997	SD02	0	0	0	14 *U*		470 *U*		470 *U*	14 *UJ*
SD03	upland	10/23/1997	SD03	0	0	0	18 *U*		580 *U*		580 *U*	18 *UJ*
SD04	upland	10/24/1997	SD04	0	0	0	18 *U*		600 *U*		600 *U*	18 *UJ*
SD05	upland	10/23/1997	SD05	0	0	0	15 *U*		1,000 *U*		1,000 *U*	15 *UJ*
SD06	upland	10/23/1997	SD06	0	0	0	56 *UJ*		1,700 *UJ*		1,700 *UJ*	56 *UJ*
SD07	upland	10/23/1997	SD07	0	0	0	31 *UJ*		5,000 *UJ*		1,400 *J*	55 *J*
SD08	upland	10/23/1997	SD08	0	0	0	16 *U*		6,300 *J*		32,000	16 *UJ*
SD09	upland	10/28/1997	SD09	0	0	0	25 *UJ*		820 *UJ*		820 *UJ*	25 *UJ*
SD10	upland	10/28/1997	SD10	0	0	0	38 *UJ*		1,300 *UJ*		1,300 *UJ*	38 *UJ*
SD11	upland	10/28/1997	SD11	0	0	0	48 *UJ*		1,600 *UJ*		1,600 *UJ*	48 *UJ*
SD12	upland	10/28/1997	SD12	0	0	0	32 *UJ*		1,100 *UJ*		1,100 *UJ*	32 *UJ*
SD13	upland	10/27/1997	SD13	0	0	0	16 *UJ*		520 *U*		520 *U*	16 *UJ*
SD14	upland	10/27/1997	SD14	0	0	0	19 *UJ*		620 *U*		620 *U*	19 *UJ*
SD15	upland	10/24/1997	SD15	0	0	0	12 *UJ*		380 *U*		380 *U*	12 *UJ*
SD16	upland	10/27/1997	SD16	0	0	0	17 *UJ*		550 *U*		550 *U*	17 *UJ*
SD17	upland	10/27/1997	SD17	0	0	0	20 *UJ*		650 *U*		70 *J*	20 *UJ*
SD18	upland	10/29/1997	SD18	0	0	0	18 *U*		600 *UJ*		600 *UJ*	18 *U*
SD19	upland	10/24/1997	SD19	0	0	0	12 *U*		400 *U*		400 *U*	12 *UJ*
SD20	upland	10/24/1997	SD20	A	0	0	11 *U*		11,000 *UJ*		11,000 *UJ*	11 *UJ*
SD20	upland	10/24/1997	SD20	B	0	0	11 *U*		11,000 *UJ*		11,000 *UJ*	11 *UJ*
SD21	Ruplnd	10/24/1997	SD21	0	0	0	11 *U*		370 *U*		370 *U*	11 *UJ*
SD22	upland	10/24/1997	SD22	0	0	0	12 *U*		400 *U*		110 *J*	12 *UJ*
SD23	upland	10/24/1997	SD23	0	0	0	11 *U*		380 *U*		380 *U*	11 *UJ*
SD24	river	10/27/1997	SD24	0	0	0	29 *UJ*		970 *UJ*		970 *UJ*	29 *UJ*
SD25	river	10/29/1997	SD25	0	0	0	30 *UJ*		1,000 *UJ*		290 *J*	30 *UJ*
SD26	marsh	10/29/1997	SD26	0	0	0	59 *UJ*		1,900 *UJ*		1,900 *UJ*	59 *UJ*
SD27	river	10/30/1997	SD27	0	0	0	38 *UJ*		1,300 *UJ*		1,300 *UJ*	38 *UJ*
SD28	upland	10/28/1997	SD28	0	0	0	28 *UJ*		940 *UJ*		940 *UJ*	28 *UJ*
SD29	upland	10/27/1997	SD29	0	0	0	15 *UJ*		480 *U*		76 *J*	15 *UJ*
SD30	upland	10/29/1997	SD30	0	0	0	14 *U*		480 *UJ*		480 *UJ*	14 *U*
SD31	river	10/30/1997	SD31	0	0	0	30 *UJ*		1,000 *UJ*		1,000 *UJ*	30 *UJ*
SD32	upland	10/28/1997	SD32	0	0	0	21 *UJ*		700 *UJ*		700 *UJ*	21 *UJ*
SD33	marsh	10/28/1997	SD33	0	0	0	26 *UJ*		850 *UJ*		850 *UJ*	26 *UJ*
SD34	upland	10/30/1997	SD34	0	0	0	18 *U*		580 *U*		580 *U*	18 *UJ*
SD35	marsh	10/30/1997	SD35	0	0	0	23 *UJ*		750 *UJ*		750 *UJ*	23 *UJ*
SD36	marsh	10/30/1997	SD36	0	0	0	15 *U*		330 *J*		150 *J*	15 *UJ*
SD37	marsh	10/30/1997	SD37	A	0	0	12 *U*		120 *J*		68 *J*	12 *UJ*
SD37	marsh	10/30/1997	SD37	B	0	0	12 *UJ*		180 *J*		82 *J*	12 *UJ*
SD38	river	6/24/1998	SD38	0	0	0	33 *UJ*		1,000 *UJ*		1,000 *UJ*	33 *UJ*
SD39	river	6/24/1998	SD39	A	0	0	28 *UJ*		4,300 *UJ*		4,300 *UJ*	28 *UJ*
SD39	river	6/24/1998	SD39	B	0	0	29 *UJ*		4,500 *UJ*		4,500 *UJ*	29 *UJ*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	1,2-Dichloro-propane (µg/kg dry)	1,3-Dichloro-benzene (µg/kg dry)	1,3-Dichloro-benzene (µg/kg dry)	1,4-Dichloro-benzene (µg/kg dry)	1,4-Dichloro-benzene (µg/kg dry)	2-Butanone (µg/kg dry)
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	29 *UJ*	3.0 *J*		10 *J*		29 *UJ*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	22 *UJ*	22 *UJ*		22 *UJ*		22 *UJ*
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	23 *UJ*	23 *UJ*		23 *UJ*		23 *UJ*
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	23 *UJ*	23 *UJ*		4.0 *J*		23 *UJ*
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	32 *UJ*	32 *UJ*		32 *UJ*		32 *UJ*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	22 *UJ*	22 *UJ*		22 *UJ*		22 *UJ*
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	18 *UJ*	18 *UJ*		18 *UJ*		18 *UJ*
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	25 *UJ*	25 *UJ*		25 *UJ*		25 *UJ*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	57 *UJ*	57 *UJ*		57 *UJ*		57 *UJ*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	23 *UJ*	23 *UJ*		23 *UJ*		23 *UJ*
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	23 *UJ*	23 *UJ*		23 *UJ*		23 *UJ*
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	18 *UJ*	18 *UJ*		18 *UJ*		18 *UJ*
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	32 *UJ*	32 *UJ*		32 *UJ*		32 *UJ*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	24 *UJ*	24 *UJ*		24 *UJ*		24 *UJ*
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	23 *UJ*	23 *UJ*		23 *UJ*		23 *UJ*
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	22 *UJ*	22 *UJ*		22 *UJ*		22 *UJ*
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	20 *UJ*	20 *UJ*		20 *UJ*		20 *UJ*
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	20 *UJ*	20 *UJ*		20 *UJ*		20 *UJ*
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	23 *UJ*	23 *UJ*		23 *UJ*		23 *UJ*
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	22 *UJ*	22 *UJ*		22 *UJ*		22 *UJ*
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	28 *UJ*	28 *UJ*		28 *UJ*		28 *UJ*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	24 *UJ*	24 *UJ*		24 *UJ*		24 *UJ*
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	26 *UJ*	26 *UJ*		26 *UJ*		26 *UJ*
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	21 *UJ*	21 *UJ*		21 *UJ*		21 *UJ*
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	15 *UJ*	15 *UJ*		15 *UJ*		15 *UJ*
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	20 *UJ*	20 *UJ*		20 *UJ*		20 *UJ*
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	18 *UJ*	18 *UJ*		18 *UJ*		18 *UJ*
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	17 *UJ*	17 *UJ*		17 *UJ*		17 *UJ*
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	94 *UJ*	94 *UJ*		94 *UJ*		94 *UJ*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	25 *UJ*	25 *UJ*		25 *UJ*		25 *UJ*
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	23 *UJ*	23 *UJ*		23 *UJ*		23 *UJ*
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	34 *UJ*	34 *UJ*		34 *UJ*		34 *UJ*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	96 *UJ*	96 *UJ*		96 *UJ*		96 *UJ*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	25 *UJ*	25 *UJ*		25 *UJ*		48 *J*
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	22 *UJ*	22 *UJ*		22 *UJ*		22 *UJ*
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	68 *UJ*	68 *UJ*		68 *UJ*		68 *UJ*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	24 *UJ*	24 *UJ*		24 *UJ*		24 *UJ*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	19 *UJ*	19 *UJ*		19 *UJ*		19 *UJ*
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	21 *UJ*	21 *UJ*		21 *UJ*		21 *UJ*
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	42 *UJ*	42 *UJ*		4.0 *J*		42 *UJ*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	13 *UJ*	13 *UJ*		13 *UJ*		13 *UJ*
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	36 *UJ*	16,000 *J*		44,000 *J*		36 *UJ*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	1,2-Dichloro-propane (µg/kg dry)	1,3-Dichloro-benzene (µg/kg dry)	1,3-Dichloro-benzene (µg/kg dry)	1,4-Dichloro-benzene (µg/kg dry)	1,4-Dichloro-benzene (µg/kg dry)	2-Butanone (µg/kg dry)
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	26 *UJ*	6.0 *J*		16 *J*		26 *UJ*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	22 *UJ*	33,000 *J*		79,000 *J*		22 *UJ*
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	19 *UJ*	19 *UJ*		19 *UJ*		19 *UJ*
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	20 *UJ*	20 *UJ*		20 *UJ*		20 *UJ*
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	15 *UJ*	15 *UJ*		15 *UJ*		15 *UJ*
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	19 *UJ*	19 *UJ*		19 *UJ*		19 *UJ*

Note:
Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	2-Hexanone (µg/kg dry)	4-Methyl-2-pentanone (µg/kg dry)	Acetone (µg/kg dry)	Benzene (µg/kg dry)	Bromodichloro-methane (µg/kg dry)	Bromomethane (µg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	26 *UJ*	26 *UJ*	220 *J*	26 *UJ*	26 *UJ*	26 *UJ*
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	29 *UJ*	29 *UJ*	79 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	27 *UJ*	27 *UJ*	98 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	29	29	78	29	29	29
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	14 *UJ*	14 *UJ*	21 *UJ*	14 *UJ*	14 *UJ*	14 *UJ*
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	19 *UJ*	19 *UJ*	78 *J*	19 *UJ*	19 *UJ*	6.0 *J*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	16 *UJ*	16 *UJ*	96 *J*	16 *UJ*	16 *UJ*	16 *UJ*
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	18 *UJ*	18 *UJ*	71 *J*	18 *UJ*	18 *UJ*	18 *UJ*
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	32 *UJ*	32 *UJ*	130 *J*	32 *UJ*	32 *UJ*	32 *UJ*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	35 *UJ*	35 *UJ*	120 *J*	6.0 *J*	35 *UJ*	35 *UJ*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	34 *UJ*	34 *UJ*	150 *J*	6.0 *J*	34 *UJ*	34 *UJ*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	39 *UJ*	39 *UJ*	90 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	34 *UJ*	34 *UJ*	290 *J*	34 *UJ*	34 *UJ*	8.0 *J*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	35 *UJ*	35 *UJ*	87 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	28 *UJ*	28 *UJ*	180 *J*	28 *UJ*	28 *UJ*	28 *UJ*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	33 *UJ*	33 *UJ*	280 *J*	33 *UJ*	33 *UJ*	7.0 *J*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	28 *UJ*	28 *UJ*	100 *UJ*	5.0 *J*	28 *UJ*	28 *UJ*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	28 *UJ*	28 *UJ*	190 *J*	28 *UJ*	28 *UJ*	28 *UJ*
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	27 *UJ*	27 *UJ*	170 *J*	27 *UJ*	27 *UJ*	27 *UJ*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	37 *UJ*	37 *UJ*	67 *UJ*	37 *UJ*	37 *UJ*	37 *UJ*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	33 *UJ*	17 *J*	120 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	35 *UJ*	35 *UJ*	73 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	45 *UJ*	45 *UJ*	130 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	69 *UJ*	69 *UJ*	350 *UJ*	69 *UJ*	69 *UJ*	69 *UJ*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	27 *UJ*	27 *UJ*	99 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	26 *UJ*	26 *UJ*	140 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	38 *UJ*	38 *UJ*	170 *UJ*	38 *UJ*	38 *UJ*	38 *UJ*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	84 *UJ*	7.0 *J*	460 *J*	84 *UJ*	84 *UJ*	84 *UJ*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	35 *UJ*	4.0 *J*	220 *J*	35 *UJ*	35 *UJ*	35 *UJ*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	26 *UJ*	26 *UJ*	100 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	35 *UJ*	35 *UJ*	150 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6	39 *UJ*	39 *UJ*	210 *UJ*	39 *UJ*	39 *UJ*	11 *J*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	33 *UJ*	4.0 *J*	340 *J*	33 *UJ*	33 *UJ*	33 *UJ*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	32 *UJ*	32 *UJ*	200 *J*	32 *UJ*	32 *UJ*	32 *UJ*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	38 *UJ*	38 *UJ*	130 *UJ*	38 *UJ*	38 *UJ*	6.0 *J*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	36 *UJ*	36 *UJ*	320 *J*	36 *UJ*	36 *UJ*	36 *UJ*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	29 *UJ*	29 *UJ*	160 *UJ*	29 *UJ*	29 *UJ*	5.0 *J*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	28 *UJ*	28 *UJ*	210 *J*	28 *UJ*	28 *UJ*	28 *UJ*
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	31 *UJ*	31 *UJ*	120 *UJ*	31 *UJ*	31 *UJ*	17 *J*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	45 *UJ*	45 *UJ*	110 *UJ*	45 *UJ*	45 *UJ*	11 *J*
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	27 *U*	27 *U*	67 *UJ*	27 *U*	27 *U*	27 *U*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	2-Hexanone (µg/kg dry)	4-Methyl-2-pentanone (µg/kg dry)	Acetone (µg/kg dry)	Benzene (µg/kg dry)	Bromodichloro-methane (µg/kg dry)	Bromomethane (µg/kg dry)
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	34 *U*	34 *U*	160 *UJ*	34 *U*	34 *U*	34 *U*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	27 *UJ*	27 *UJ*	160 *UJ*	27 *UJ*	27 *UJ*	7.0 *J*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	35 *UJ*	35 *UJ*	99 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	23 *UJ*	23 *UJ*	100 *J*	23 *UJ*	23 *UJ*	23 *UJ*
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	22 *UJ*	22 *UJ*	41 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	28 *UJ*	28 *UJ*	87 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	26 *UJ*	26 *UJ*	150 *UJ*	26 *U*	26 *U*	12 *J*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	23 *UJ*	23 *UJ*	200 *J*	23 *U*	23 *U*	4.0 *J*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	29 *U*	29 *U*	170 *UJ*	29 *U*	29 *U*	2.0 *J*
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	25 *UJ*	25 *UJ*	180 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	45 *UJ*	7.0 *J*	260 *J*	45 *UJ*	45 *UJ*	10 *J*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	22 *U*	4.0 *J*	120	22 *U*	22 *U*	22 *UJ*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	24 *U*	3.0 *J*	160	24 *U*	24 *U*	24 *UJ*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	30 *UJ*	5.0 *J*	410 *J*	30 *UJ*	30 *UJ*	30 *UJ*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	26 *UJ*	26 *UJ*	48 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	35 *UJ*	35 *UJ*	210 *UJ*	4.0 *J*	35 *UJ*	9.0 *J*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	35 *UJ*	35 *UJ*	680 *J*	5.0 *J*	35 *UJ*	35 *UJ*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	34 *UJ*	34 *UJ*	270 *UJ*	34 *UJ*	34 *UJ*	24 *J*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	45 *UJ*	45 *UJ*	550 *J*	45 *UJ*	45 *UJ*	45 *UJ*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	16 *U*	16 *U*	66	16 *U*	16 *U*	16 *UJ*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	18 *U*	18 *U*	130	18 *U*	18 *U*	18 *UJ*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	24 *UJ*	24 *UJ*	120 *J*	24 *UJ*	24 *UJ*	24 *UJ*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	42 *UJ*	5.0 *J*	500 *J*	42 *UJ*	42 *UJ*	42 *UJ*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	18 *U*	18 *U*	99	18 *U*	18 *U*	3.0 *J*
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	13 *U*	13 *U*	68	13 *U*	13 *U*	13 *UJ*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	31 *UJ*	3.0 *J*	290 *J*	31 *UJ*	31 *UJ*	31 *UJ*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	18 *U*	18 *U*	50 *UJ*	18 *U*	18 *U*	11 *J*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	22 *U*	22 *U*	52 *UJ*	22 *U*	22 *U*	6.0 *J*
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	27 *U*	27 *U*	69 *UJ*	27 *U*	27 *U*	27 *U*
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	24 *UJ*	24 *UJ*	230 *UJ*	24 *UJ*	24 *UJ*	9.0 *J*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	17 *UJ*	17 *UJ*	170 *UJ*	17 *UJ*	17 *UJ*	4.0 *J*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	22 *U*	3.0 *J*	210 *UJ*	22 *U*	22 *U*	6.0 *J*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	22 *U*	22 *U*	130 *UJ*	22 *U*	22 *U*	22 *U*
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	21 *UJ*	21 *UJ*	230 *UJ*	21 *UJ*	21 *UJ*	7.0 *J*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	39 *UJ*	5.0 *J*	130 *J*	39 *UJ*	39 *UJ*	39 *UJ*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	36 *UJ*	36 *UJ*	370 *J*	3.0 *J*	36 *UJ*	36 *UJ*
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	31 *UJ*	4.0 *J*	220 *J*	2.0 *J*	31 *UJ*	31 *U*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	28 *UJ*	28 *UJ*	84 *J*	1.0 *J*	28 *UJ*	28 *U*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	32 *UJ*	3.0 *J*	120 *J*	32 *UJ*	32 *UJ*	32 *UJ*
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	35 *UJ*	6.0 *J*	350 *J*	4.0 *J*	35 *UJ*	35 *UJ*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	29 *UJ*	29 *UJ*	230 *J*	2.0 *J*	29 *UJ*	29 *UJ*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	32 *UJ*	6.0 *J*	110 *J*	2.0 *J*	32 *UJ*	32 *UJ*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	2-Hexanone (µg/kg dry)	4-Methyl-2-pentanone (µg/kg dry)	Acetone (µg/kg dry)	Benzene (µg/kg dry)	Bromodichloro-methane (µg/kg dry)	Bromomethane (µg/kg dry)
SD01	Ruplnd	10/23/1997	SD01	0	0	0	16 *UJ*	16 *UJ*	16 *UJ*	16 *U*	16 *U*	16 *U*
SD02	Ruplnd	10/24/1997	SD02	0	0	0	14 *UJ*	14 *UJ*	14 *UJ*	14 *U*	14 *U*	14 *U*
SD03	upland	10/23/1997	SD03	0	0	0	18 *UJ*	18 *UJ*	18 *UJ*	18 *U*	18 *U*	18 *U*
SD04	upland	10/24/1997	SD04	0	0	0	18 *UJ*	18 *UJ*	18 *UJ*	18 *U*	18 *U*	18 *U*
SD05	upland	10/23/1997	SD05	0	0	0	15 *UJ*	15 *UJ*	28 *J*	15 *U*	15 *U*	15 *U*
SD06	upland	10/23/1997	SD06	0	0	0	56 *UJ*	56 *UJ*	170 *J*	56 *UJ*	56 *UJ*	56 *UJ*
SD07	upland	10/23/1997	SD07	0	0	0	31 *UJ*	31 *UJ*	170 *J*	62 *J*	31 *UJ*	31 *UJ*
SD08	upland	10/23/1997	SD08	0	0	0	16 *UJ*	16 *UJ*	16 *UJ*	16 *U*	16 *U*	16 *U*
SD09	upland	10/28/1997	SD09	0	0	0	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*
SD10	upland	10/28/1997	SD10	0	0	0	38 *UJ*	38 *UJ*	38 *UJ*	38 *UJ*	38 *UJ*	38 *UJ*
SD11	upland	10/28/1997	SD11	0	0	0	48 *UJ*	48 *UJ*	150 *J*	48 *UJ*	48 *UJ*	48 *UJ*
SD12	upland	10/28/1997	SD12	0	0	0	32 *UJ*	32 *UJ*	94 *J*	32 *UJ*	32 *UJ*	32 *UJ*
SD13	upland	10/27/1997	SD13	0	0	0	16 *UJ*	16 *UJ*	16 *UJ*	16 *U*	16 *U*	16 *U*
SD14	upland	10/27/1997	SD14	0	0	0	19 *UJ*	19 *UJ*	19 *UJ*	19 *U*	19 *U*	19 *U*
SD15	upland	10/24/1997	SD15	0	0	0	12 *UJ*	12 *UJ*	12 *UJ*	12 *U*	12 *U*	12 *U*
SD16	upland	10/27/1997	SD16	0	0	0	17 *UJ*	17 *UJ*	17 *UJ*	17 *U*	17 *U*	17 *U*
SD17	upland	10/27/1997	SD17	0	0	0	20 *UJ*	20 *UJ*	20 *UJ*	20 *U*	20 *U*	20 *U*
SD18	upland	10/29/1997	SD18	0	0	0	18 *U*	18 *U*	18 *UJ*	18 *U*	18 *U*	18 *U*
SD19	upland	10/24/1997	SD19	0	0	0	12 *UJ*	12 *UJ*	12 *UJ*	12 *U*	12 *U*	12 *U*
SD20	upland	10/24/1997	SD20	A	0	0	11 *UJ*	11 *UJ*	11 *UJ*	11 *U*	11 *U*	11 *U*
SD20	upland	10/24/1997	SD20	B	0	0	11 *UJ*	11 *UJ*	37 *J*	11 *U*	11 *U*	11 *U*
SD21	Ruplnd	10/24/1997	SD21	0	0	0	11 *UJ*	11 *UJ*	24 *J*	11 *U*	11 *U*	11 *U*
SD22	upland	10/24/1997	SD22	0	0	0	12 *UJ*	12 *UJ*	29 *J*	12 *U*	12 *U*	12 *U*
SD23	upland	10/24/1997	SD23	0	0	0	11 *UJ*	11 *UJ*	36 *J*	11 *U*	11 *U*	11 *U*
SD24	river	10/27/1997	SD24	0	0	0	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*
SD25	river	10/29/1997	SD25	0	0	0	30 *UJ*	30 *UJ*	82 *J*	30 *UJ*	30 *UJ*	30 *UJ*
SD26	marsh	10/29/1997	SD26	0	0	0	59 *UJ*	59 *UJ*	250 *J*	59 *UJ*	59 *UJ*	59 *UJ*
SD27	river	10/30/1997	SD27	0	0	0	38 *UJ*	38 *UJ*	38 *UJ*	38 *UJ*	38 *UJ*	38 *UJ*
SD28	upland	10/28/1997	SD28	0	0	0	28 *UJ*	28 *UJ*	98 *J*	28 *UJ*	28 *UJ*	28 *UJ*
SD29	upland	10/27/1997	SD29	0	0	0	15 *UJ*	15 *UJ*	15 *UJ*	15 *U*	15 *U*	15 *U*
SD30	upland	10/29/1997	SD30	0	0	0	14 *U*	14 *U*	14 *UJ*	14 *U*	14 *U*	14 *U*
SD31	river	10/30/1997	SD31	0	0	0	30 *UJ*	30 *UJ*	30 *UJ*	30 *UJ*	30 *UJ*	30 *UJ*
SD32	upland	10/28/1997	SD32	0	0	0	21 *UJ*	21 *UJ*	66 *J*	21 *UJ*	21 *UJ*	21 *UJ*
SD33	marsh	10/28/1997	SD33	0	0	0	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
SD34	upland	10/30/1997	SD34	0	0	0	18 *U*	18 *U*	18 *U*	18 *U*	18 *U*	18 *U*
SD35	marsh	10/30/1997	SD35	0	0	0	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SD36	marsh	10/30/1997	SD36	0	0	0	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*	15 *U*
SD37	marsh	10/30/1997	SD37	A	0	0	12 *U*	12 *U*	16 *UJ*	12 *U*	12 *U*	12 *U*
SD37	marsh	10/30/1997	SD37	B	0	0	12 *UJ*	12 *UJ*	12 *UJ*	12 *UJ*	12 *UJ*	12 *UJ*
SD38	river	6/24/1998	SD38	0	0	0	33 *UJ*	33 *UJ*	400 *J*	33 *UJ*	33 *UJ*	33 *UJ*
SD39	river	6/24/1998	SD39	A	0	0	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*
SD39	river	6/24/1998	SD39	B	0	0	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	2-Hexanone (µg/kg dry)	4-Methyl-2-pentanone (µg/kg dry)	Acetone (µg/kg dry)	Benzene (µg/kg dry)	Bromodichloro-methane (µg/kg dry)	Bromomethane (µg/kg dry)
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	29 *UJ*	29 *UJ*	140 *J*	7.0 *J*	29 *UJ*	29 *UJ*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	22 *UJ*	22 *UJ*	80 *J*	13 *J*	22 *UJ*	22 *UJ*
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	23 *UJ*	23 *UJ*	57 *J*	4.0 *J*	23 *UJ*	23 *UJ*
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	23 *UJ*	23 *UJ*	110 *J*	8.0 *J*	23 *UJ*	23 *UJ*
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	32 *UJ*	32 *UJ*	140 *J*	4.0 *J*	32 *UJ*	32 *UJ*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	22 *UJ*	22 *UJ*	69 *J*	15 *J*	22 *UJ*	22 *UJ*
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	18 *UJ*	18 *UJ*	42 *J*	10 *J*	18 *UJ*	18 *UJ*
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	25 *UJ*	25 *UJ*	92 *J*	11 *J*	25 *UJ*	25 *UJ*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	57 *UJ*	57 *UJ*	160 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	23 *UJ*	23 *UJ*	75 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	23 *UJ*	23 *UJ*	100 *J*	23 *UJ*	23 *UJ*	23 *UJ*
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	32 *UJ*	32 *UJ*	84 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	24 *UJ*	24 *UJ*	37 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	23 *UJ*	23 *UJ*	80 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	20 *UJ*	20 *UJ*	89 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	20 *UJ*	20 *UJ*	120 *J*	20 *UJ*	20 *UJ*	20 *UJ*
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	23 *UJ*	23 *UJ*	180 *J*	23 *UJ*	23 *UJ*	23 *UJ*
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	22 *UJ*	22 *UJ*	43 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	28 *UJ*	28 *UJ*	99 *UJ*	5.0 *J*	28 *UJ*	5.0 *J*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	26 *UJ*	26 *UJ*	61 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	15 *UJ*	15 *UJ*	66 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	20 *UJ*	20 *UJ*	56 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	18 *UJ*	18 *UJ*	72 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	17 *UJ*	17 *UJ*	58 *UJ*	17 *UJ*	17 *UJ*	17 *UJ*
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	94 *UJ*	94 *UJ*	270 *J*	94 *UJ*	94 *UJ*	94 *UJ*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	25 *UJ*	25 *UJ*	85 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	23 *UJ*	23 *UJ*	84 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	34 *UJ*	34 *UJ*	110 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	96 *UJ*	96 *UJ*	380 *J*	96 *UJ*	96 *UJ*	96 *UJ*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	25 *UJ*	25 *UJ*	98 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	22 *UJ*	22 *UJ*	79 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	68 *UJ*	68 *UJ*	200 *UJ*	68 *UJ*	68 *UJ*	68 *UJ*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	24 *UJ*	24 *UJ*	54 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	19 *UJ*	19 *UJ*	27 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	21 *UJ*	21 *UJ*	40 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	42 *UJ*	42 *UJ*	130 *UJ*	42 *UJ*	42 *UJ*	42 *UJ*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	13 *UJ*	13 *UJ*	13 *UJ*	13 *UJ*	13 *UJ*	13 *UJ*
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	36 *UJ*	36 *UJ*	89 *UJ*	8.0 *J*	36 *UJ*	36 *UJ*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	2-Hexanone (µg/kg dry)	4-Methyl-2-pentanone (µg/kg dry)	Acetone (µg/kg dry)	Benzene (µg/kg dry)	Bromodichloro-methane (µg/kg dry)	Bromomethane (µg/kg dry)
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	26 *UJ*	26 *UJ*	84 *UJ*	4.0 *J*	26 *UJ*	26 *UJ*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	22 *UJ*	22 *UJ*	52 *UJ*	4.0 *J*	22 *UJ*	3.0 *J*
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	20 *UJ*	20 *UJ*	33 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	15 *UJ*	15 *UJ*	41 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*

Note: Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Carbon Disulfide (µg/kg dry)	Carbon Tetrachloride (µg/kg dry)	Trichlorofluoro-methane (µg/kg dry)	1,1,2-Trichloro-1,2,2-Trifluoroethane (µg/kg dry)	Chlorobenzene (µg/kg dry)	Chloroethane (µg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	83 *J*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	21 *J*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	70 *J*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	220	29	29	29	29	29
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	16 *UJ*	14 *UJ*	14 *UJ*	4.0 *J*	14 *UJ*	14 *UJ*
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	56 *UJ*	19 *UJ*	19 *UJ*	32 *J*	19 *UJ*	19 *UJ*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	16 *UJ*	16 *UJ*	2.0 *J*	16 *UJ*	16 *UJ*	16 *UJ*
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	35 *UJ*	18 *UJ*	18 *UJ*	30 *J*	18 *UJ*	18 *UJ*
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	94 *J*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	25 *J*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	23 *J*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	70 *J*	39 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	190 *J*	34 *UJ*	34 *UJ*	56 *J*	34 *UJ*	34 *UJ*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	100 *J*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	28 *UJ*	28 *UJ*	28 *UJ*	34 *J*	28 *UJ*	28 *UJ*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	100 *UJ*	33 *UJ*	33 *UJ*	57 *J*	33 *UJ*	33 *UJ*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	74 *J*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	90 *J*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	24 *J*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	96 *J*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	180 *J*	37 *UJ*	37 *UJ*	37 *UJ*	37 *UJ*	37 *UJ*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	110 *J*	33 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	72 *J*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	180 *J*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	500 *J*	69 *UJ*	69 *UJ*	36 *J*	69 *UJ*	69 *UJ*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	77 *J*	27 *UJ*	27 *UJ*	12 *J*	27 *UJ*	27 *UJ*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	130 *J*	26 *UJ*	26 *UJ*	9.0 *J*	26 *UJ*	26 *UJ*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	140 *J*	38 *UJ*	38 *UJ*	12 *J*	38 *UJ*	38 *UJ*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	830 *J*	84 *UJ*	84 *UJ*	84 *UJ*	84 *UJ*	84 *UJ*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	92 *UJ*	35 *UJ*	35 *UJ*	43 *J*	35 *UJ*	35 *UJ*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	57 *UJ*	26 *UJ*	26 *UJ*	8.0 *J*	26 *UJ*	26 *UJ*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	170 *J*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6	130 *UJ*	39 *UJ*	39 *UJ*	11 *J*	39 *UJ*	39 *UJ*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	110 *UJ*	33 *UJ*	33 *UJ*	8.0 *J*	33 *UJ*	33 *UJ*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	48 *UJ*	32 *UJ*	32 *UJ*	4.0 *J*	32 *UJ*	32 *UJ*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	170 *J*	38 *UJ*	38 *UJ*	9.0 *J*	38 *UJ*	38 *UJ*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	170 *J*	36 *UJ*	36 *UJ*	7.0 *J*	36 *UJ*	36 *UJ*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	29 *UJ*	29 *UJ*	29 *UJ*	4.0 *J*	29 *UJ*	29 *UJ*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	31 *UJ*	28 *UJ*	28 *UJ*	8.0 *J*	28 *UJ*	28 *UJ*
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	150 *J*	31 *UJ*	31 *UJ*	6.0 *J*	31 *UJ*	31 *UJ*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	140 *J*	45 *UJ*	45 *UJ*	13 *J*	45 *UJ*	45 *UJ*
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	48	27 *U*	4.0 *J*	4.0 *J*	27 *U*	27 *U*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Carbon Disulfide (µg/kg dry)	Carbon Tetrachloride (µg/kg dry)	Trichlorofluoro-methane (µg/kg dry)	1,1,2-Trichloro-1,2,2-Trifluoroethane (µg/kg dry)	Chlorobenzene (µg/kg dry)	Chloroethane (µg/kg dry)
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	42	34 *U*	34 *U*	5.0 *J*	34 *U*	34 *U*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	84 *J*	27 *UJ*	27 *UJ*	4.0 *J*	27 *UJ*	27 *R*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	150 *J*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	52 *J*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	14 *J*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	64 *J*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	33	26 *U*	2.0 *J*	5.0 *J*	26 *U*	26 *R*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	28	23 *U*	23 *UJ*	7.0 *J*	23 *U*	23 *R*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	29	29 *U*	29 *U*	7.0 *J*	29 *U*	29 *U*
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	61 *J*	25 *UJ*	25 *UJ*	3.0 *J*	25 *UJ*	25 *UJ*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	45 *UJ*	45 *UJ*	45 *UJ*	7.0 *J*	45 *UJ*	45 *UJ*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	22 *U*	22 *U*	22 *U*	4.0 *J*	22 *U*	22 *U*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	26 *U*	24 *U*	24 *U*	6.0 *J*	24 *U*	24 *U*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	150 *J*	30 *UJ*	30 *UJ*	4.0 *J*	30 *UJ*	30 *UJ*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	40 *J*	35 *UJ*	35 *UJ*	5.0 *J*	35 *UJ*	35 *R*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	150 *J*	35 *UJ*	35 *UJ*	7.0 *J*	9.0 *J*	35 *R*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	64 *J*	34 *UJ*	34 *UJ*	5.0 *J*	34 *UJ*	34 *R*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	130 *J*	45 *UJ*	45 *UJ*	12 *J*	45 *UJ*	45 *UJ*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	16 *U*	16 *U*	16 *U*	4.0 *J*	16 *U*	16 *U*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	18 *U*	18 *U*	18 *U*	3.0 *J*	18 *U*	18 *U*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	31 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	76 *J*	42 *UJ*	42 *UJ*	6.0 *J*	42 *UJ*	42 *UJ*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	18 *U*	18 *U*	18 *U*	3.0 *J*	18 *U*	18 *U*
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	13 *U*	13 *U*	2.0 *J*	13 *U*	13 *U*	13 *U*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	58 *J*	31 *UJ*	31 *UJ*	4.0 *J*	31 *UJ*	31 *UJ*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	16 *J*	18 *U*	18 *U*	18 *U*	18 *U*	18 *U*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	8.0 *J*	22 *U*	22 *U*	3.0 *J*	22 *U*	22 *U*
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	15 *J*	27 *U*	27 *U*	27 *U*	27 *U*	27 *U*
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	67 *J*	24 *UJ*	24 *UJ*	5.0 *J*	24 *UJ*	24 *R*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	12 *J*	17 *UJ*	17 *UJ*	1.0 *J*	17 *UJ*	17 *R*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	25 *J*	22 *U*	22 *U*	4.0 *J*	22 *U*	22 *U*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	19 *J*	22 *U*	7.0 *J*	3.0 *J*	22 *U*	22 *U*
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	60 *J*	21 *UJ*	21 *UJ*	2.0 *J*	21 *UJ*	21 *R*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	39 *UJ*	39 *UJ*	39 *UJ*	8.0 *J*	39 *UJ*	39 *UJ*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	86 *J*	36 *UJ*	36 *UJ*	7.0 *J*	2.0 *J*	36 *UJ*
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	53 *J*	31 *UJ*	31 *UJ*	7.0 *J*	3.0 *J*	31 *UJ*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	31 *UJ*	28 *UJ*	28 *UJ*	6.0 *J*	28 *UJ*	28 *UJ*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	32 *UJ*	32 *UJ*	32 *UJ*	9.0 *J*	2.0 *J*	32 *UJ*
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	86 *J*	35 *UJ*	35 *UJ*	5.0 *J*	7.0 *J*	35 *UJ*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	61 *J*	29 *UJ*	29 *UJ*	6.0 *J*	29 *UJ*	29 *UJ*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	32 *UJ*	32 *UJ*	32 *UJ*	5.0 *J*	5.0 *J*	32 *UJ*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Carbon Disulfide (µg/kg dry)	Carbon Tetrachloride (µg/kg dry)	Trichlorofluoro-methane (µg/kg dry)	1,1,2-Trichloro-1,2,2-Trifluoroethane (µg/kg dry)	Chlorobenzene (µg/kg dry)	Chloroethane (µg/kg dry)
SD01	Ruplnd	10/23/1997	SD01	0	0	0	16 *U*	16 *U*			16 *U*	16 *U*
SD02	Ruplnd	10/24/1997	SD02	0	0	0	14 *U*	14 *U*			14 *U*	14 *U*
SD03	upland	10/23/1997	SD03	0	0	0	18 *U*	18 *U*			18 *U*	18 *U*
SD04	upland	10/24/1997	SD04	0	0	0	18 *U*	18 *U*			18 *U*	18 *U*
SD05	upland	10/23/1997	SD05	0	0	0	15 *U*	15 *U*			15 *U*	15 *U*
SD06	upland	10/23/1997	SD06	0	0	0	56 *UJ*	56 *UJ*			56 *UJ*	56 *UJ*
SD07	upland	10/23/1997	SD07	0	0	0	31 *UJ*	31 *UJ*			5.0 *J*	31 *UJ*
SD08	upland	10/23/1997	SD08	0	0	0	16 *U*	16 *U*			4.0 *J*	16 *U*
SD09	upland	10/28/1997	SD09	0	0	0	25 *UJ*	25 *UJ*			25 *UJ*	25 *UJ*
SD10	upland	10/28/1997	SD10	0	0	0	38 *UJ*	38 *UJ*			38 *UJ*	38 *UJ*
SD11	upland	10/28/1997	SD11	0	0	0	48 *UJ*	48 *UJ*			48 *UJ*	48 *UJ*
SD12	upland	10/28/1997	SD12	0	0	0	32 *UJ*	32 *UJ*			32 *UJ*	32 *UJ*
SD13	upland	10/27/1997	SD13	0	0	0	16 *UJ*	16 *U*			16 *U*	16 *U*
SD14	upland	10/27/1997	SD14	0	0	0	19 *UJ*	19 *U*			19 *U*	19 *U*
SD15	upland	10/24/1997	SD15	0	0	0	12 *UJ*	12 *U*			12 *U*	12 *U*
SD16	upland	10/27/1997	SD16	0	0	0	17 *UJ*	17 *U*			17 *U*	17 *U*
SD17	upland	10/27/1997	SD17	0	0	0	20 *UJ*	20 *U*			20 *U*	20 *U*
SD18	upland	10/29/1997	SD18	0	0	0	18 *U*	18 *U*			18 *U*	18 *U*
SD19	upland	10/24/1997	SD19	0	0	0	12 *U*	12 *U*			12 *U*	12 *U*
SD20	upland	10/24/1997	SD20	A	0	0	11 *U*	11 *U*			11 *U*	11 *U*
SD20	upland	10/24/1997	SD20	B	0	0	11 *U*	11 *U*			11 *U*	11 *U*
SD21	Ruplnd	10/24/1997	SD21	0	0	0	11 *U*	11 *U*			11 *U*	11 *U*
SD22	upland	10/24/1997	SD22	0	0	0	12 *U*	12 *U*			12 *U*	12 *U*
SD23	upland	10/24/1997	SD23	0	0	0	11 *U*	11 *U*			11 *U*	11 *U*
SD24	river	10/27/1997	SD24	0	0	0	29 *UJ*	29 *UJ*			29 *UJ*	29 *UJ*
SD25	river	10/29/1997	SD25	0	0	0	30 *UJ*	30 *UJ*			30 *UJ*	30 *UJ*
SD26	marsh	10/29/1997	SD26	0	0	0	59 *UJ*	59 *UJ*			59 *UJ*	59 *UJ*
SD27	river	10/30/1997	SD27	0	0	0	38 *UJ*	38 *UJ*			38 *UJ*	38 *UJ*
SD28	upland	10/28/1997	SD28	0	0	0	28 *UJ*	28 *UJ*			28 *UJ*	28 *UJ*
SD29	upland	10/27/1997	SD29	0	0	0	15 *UJ*	15 *U*			15 *U*	15 *U*
SD30	upland	10/29/1997	SD30	0	0	0	14 *U*	14 *U*			14 *U*	14 *U*
SD31	river	10/30/1997	SD31	0	0	0	30 *UJ*	30 *UJ*			30 *UJ*	30 *UJ*
SD32	upland	10/28/1997	SD32	0	0	0	21 *UJ*	21 *UJ*			21 *UJ*	21 *UJ*
SD33	marsh	10/28/1997	SD33	0	0	0	26 *UJ*	26 *UJ*			26 *UJ*	26 *UJ*
SD34	upland	10/30/1997	SD34	0	0	0	18 *U*	18 *U*			18 *U*	18 *U*
SD35	marsh	10/30/1997	SD35	0	0	0	23 *UJ*	23 *UJ*			23 *UJ*	23 *UJ*
SD36	marsh	10/30/1997	SD36	0	0	0	15 *U*	15 *U*			15 *U*	15 *U*
SD37	marsh	10/30/1997	SD37	A	0	0	12 *U*	12 *U*			12 *U*	12 *U*
SD37	marsh	10/30/1997	SD37	B	0	0	12 *UJ*	12 *UJ*			12 *UJ*	12 *UJ*
SD38	river	6/24/1998	SD38	0	0	0	33 *UJ*	33 *UJ*			33 *UJ*	33 *UJ*
SD39	river	6/24/1998	SD39	A	0	0	20 *UJ*	28 *UJ*			28 *UJ*	28 *UJ*
SD39	river	6/24/1998	SD39	B	0	0	31 *J*	29 *UJ*			29 *UJ*	29 *UJ*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Carbon Disulfide (µg/kg dry)	Carbon Tetrachloride (µg/kg dry)	Trichlorofluoro-methane (µg/kg dry)	1,1,2-Trichloro-1,2,2-Trifluoroethane (µg/kg dry)	Chlorobenzene (µg/kg dry)	Chloroethane (µg/kg dry)
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	36 *J*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	3.0 *J*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	11 *J*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	50 *J*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	3.0 *J*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	13 *J*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	6.0 *J*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	16 *J*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	20 *J*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	6.0 *J*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	110 *J*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	240 *J*
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	17 *UJ*	17 *UJ*	17 *UJ*	17 *UJ*	17 *UJ*	17 *UJ*
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	180 *J*	94 *UJ*	94 *UJ*	94 *UJ*	94 *UJ*	94 *UJ*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	200 *J*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	64 *J*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	55 *J*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	160 *J*	96 *UJ*	96 *UJ*	96 *UJ*	96 *UJ*	96 *UJ*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	23 *J*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	79 *J*	68 *UJ*	68 *UJ*	68 *UJ*	68 *UJ*	68 *UJ*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	3.0 *J*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	13 *J*	42 *UJ*	42 *UJ*	42 *UJ*	42 *UJ*	42 *UJ*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	13 *UJ*	13 *UJ*	13 *UJ*	13 *UJ*	13 *UJ*	13 *UJ*
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	200 *J*	36 *UJ*	36 *UJ*	36 *UJ*	14,000 *J*	1,500 *J*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Carbon Disulfide (µg/kg dry)	Carbon Tetrachloride (µg/kg dry)	Trichlorofluoro-methane (µg/kg dry)	1,1,2-Trichloro-1,2,2-Trifluoroethane (µg/kg dry)	Chlorobenzene (µg/kg dry)	Chloroethane (µg/kg dry)
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	70 *J*	26 *UJ*	26 *UJ*	26 *UJ*	71 *J*	26 *UJ*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	11,000 *J*	22 *UJ*
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*

Note:
Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Chloroform (µg/kg dry)	Chloromethane (µg/kg dry)	cis-1,2-Dichloroethene (µg/kg dry)	cis-1,3-Dichloro-propene (µg/kg dry)	Cyclohexane (µg/kg dry)	Dichlorodifluoro methane (µg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	29	29	29	29	29	29
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	2.0 *J*	14 *R*	14 *UJ*	14 *UJ*	14 *UJ*	14 *UJ*
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	2.0 *J*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	16 *UJ*	16 *UJ*	16 *UJ*	16 *UJ*	16 *UJ*	16 *UJ*
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	2.0 *J*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	39 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	4.0 *J*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	5.0 *J*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	2.0 *J*	28 *UJ*	28 *UJ*	28 *UJ*	4.0 *J*	28 *UJ*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	5.0 *J*	33 *UJ*	33 *UJ*	33 *UJ*	5.0 *J*	33 *UJ*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	37 *UJ*	37 *UJ*	37 *UJ*	37 *UJ*	37 *UJ*	37 *UJ*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	33 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	23 *J*	69 *UJ*	69 *UJ*	69 *UJ*	69 *UJ*	69 *UJ*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	4.0 *J*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	3.0 *J*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	5.0 *J*	38 *UJ*	38 *UJ*	38 *UJ*	38 *UJ*	38 *UJ*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	14 *J*	84 *UJ*	84 *UJ*	84 *UJ*	84 *UJ*	84 *UJ*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	3.0 *J*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	3.0 *J*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6	5.0 *J*	39 *R*	39 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	4.0 *J*	33 *R*	33 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	32 *UJ*	32 *R*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	5.0 *J*	38 *R*	38 *UJ*	38 *UJ*	38 *UJ*	38 *UJ*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	36 *UJ*	36 *R*	36 *UJ*	36 *UJ*	36 *UJ*	36 *UJ*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	29 *UJ*	29 *R*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	3.0 *J*	28 *R*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	31 *UJ*	31 *R*	31 *UJ*	31 *UJ*	31 *UJ*	31 *UJ*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	27 *U*	27 *U*	27 *U*	27 *U*	27 *U*	27 *U*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Chloroform (µg/kg dry)	Chloromethane (µg/kg dry)	cis-1,2-Dichloroethene (µg/kg dry)	cis-1,3-Dichloro-propene (µg/kg dry)	Cyclohexane (µg/kg dry)	Dichlorodifluoro methane (µg/kg dry)
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	34 *U*	34 *U*	34 *U*	34 *U*	34 *U*	34 *U*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	1.0 *J*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	2.0 *J*	26 *UJ*	26 *U*	26 *U*	26 *U*	26 *U*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	2.0 *J*	23 *UJ*	23 *U*	23 *U*	23 *U*	23 *U*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	3.0 *J*	29 *U*	29 *U*	29 *U*	29 *U*	29 *U*
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	4.0 *J*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	2.0 *J*	22 *UJ*	22 *U*	22 *U*	22 *U*	22 *UJ*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	2.0 *J*	24 *UJ*	24 *U*	24 *U*	24 *U*	24 *UJ*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	2.0 *J*	30 *UJ*	30 *UJ*	30 *UJ*	30 *UJ*	30 *UJ*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	11 *J*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	3.0 *J*	16 *UJ*	16 *U*	16 *U*	16 *U*	16 *UJ*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	2.0 *J*	18 *UJ*	18 *U*	18 *U*	18 *U*	18 *UJ*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	3.0 *J*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	3.0 *J*	42 *UJ*	42 *UJ*	42 *UJ*	42 *UJ*	42 *UJ*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	1.0 *J*	18 *UJ*	18 *U*	18 *U*	18 *U*	18 *UJ*
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	1.0 *J*	13 *UJ*	13 *U*	13 *U*	13 *U*	13 *UJ*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	3.0 *J*	31 *UJ*	31 *UJ*	31 *UJ*	31 *UJ*	31 *UJ*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	18 *U*	18 *U*	18 *U*	18 *U*	18 *U*	18 *U*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	22 *U*	22 *U*	22 *U*	22 *U*	22 *U*	22 *U*
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	27 *U*	27 *U*	27 *U*	27 *U*	27 *U*	27 *U*
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	2.0 *J*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	17 *UJ*	17 *UJ*	17 *UJ*	17 *UJ*	17 *UJ*	17 *UJ*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	2.0 *J*	22 *U*	22 *U*	22 *U*	22 *U*	22 *U*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	22 *U*	22 *U*	22 *U*	22 *U*	22 *U*	22 *U*
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	5.0 *J*	39 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	4.0 *J*	36 *UJ*	36 *UJ*	36 *UJ*	36 *UJ*	36 *UJ*
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	4.0 *J*	31 *UJ*	31 *UJ*	31 *UJ*	31 *UJ*	31 *UJ*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	4.0 *J*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	8.0 *J*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	5.0 *J*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	4.0 *J*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	5.0 *J*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Chloroform (µg/kg dry)	Chloromethane (µg/kg dry)	cis-1,2-Dichloroethene (µg/kg dry)	cis-1,3-Dichloro-propene (µg/kg dry)	Cyclohexane (µg/kg dry)	Dichlorodifluoro methane (µg/kg dry)
SD01	Ruplnd	10/23/1997	SD01	0	0	0	16 *U*	16 *U*		16 *U*		
SD02	Ruplnd	10/24/1997	SD02	0	0	0	14 *U*	14 *U*		14 *U*		
SD03	upland	10/23/1997	SD03	0	0	0	18 *U*	18 *U*		18 *U*		
SD04	upland	10/24/1997	SD04	0	0	0	18 *U*	18 *U*		18 *U*		
SD05	upland	10/23/1997	SD05	0	0	0	15 *U*	15 *U*		15 *U*		
SD06	upland	10/23/1997	SD06	0	0	0	56 *UJ*	56 *UJ*		56 *UJ*		
SD07	upland	10/23/1997	SD07	0	0	0	31 *UJ*	31 *UJ*		31 *UJ*		
SD08	upland	10/23/1997	SD08	0	0	0	16 *U*	16 *U*		16 *U*		
SD09	upland	10/28/1997	SD09	0	0	0	25 *UJ*	25 *UJ*		25 *UJ*		
SD10	upland	10/28/1997	SD10	0	0	0	38 *UJ*	38 *UJ*		38 *UJ*		
SD11	upland	10/28/1997	SD11	0	0	0	48 *UJ*	48 *UJ*		48 *UJ*		
SD12	upland	10/28/1997	SD12	0	0	0	32 *UJ*	32 *UJ*		32 *UJ*		
SD13	upland	10/27/1997	SD13	0	0	0	16 *U*	16 *UJ*		16 *UJ*		
SD14	upland	10/27/1997	SD14	0	0	0	19 *U*	19 *UJ*		19 *UJ*		
SD15	upland	10/24/1997	SD15	0	0	0	12 *U*	12 *UJ*		12 *UJ*		
SD16	upland	10/27/1997	SD16	0	0	0	17 *U*	17 *UJ*		17 *UJ*		
SD17	upland	10/27/1997	SD17	0	0	0	20 *U*	20 *UJ*		20 *UJ*		
SD18	upland	10/29/1997	SD18	0	0	0	18 *U*	18 *U*		18 *U*		
SD19	upland	10/24/1997	SD19	0	0	0	12 *U*	12 *U*		12 *U*		
SD20	upland	10/24/1997	SD20	A	0	0	11 *U*	11 *U*		11 *U*		
SD20	upland	10/24/1997	SD20	B	0	0	11 *U*	11 *U*		11 *U*		
SD21	Ruplnd	10/24/1997	SD21	0	0	0	11 *U*	11 *U*		11 *U*		
SD22	upland	10/24/1997	SD22	0	0	0	12 *U*	12 *U*		12 *U*		
SD23	upland	10/24/1997	SD23	0	0	0	11 *U*	11 *U*		11 *U*		
SD24	river	10/27/1997	SD24	0	0	0	29 *UJ*	29 *UJ*		29 *UJ*		
SD25	river	10/29/1997	SD25	0	0	0	30 *UJ*	30 *UJ*		30 *UJ*		
SD26	marsh	10/29/1997	SD26	0	0	0	59 *UJ*	59 *UJ*		59 *UJ*		
SD27	river	10/30/1997	SD27	0	0	0	38 *UJ*	38 *UJ*		38 *UJ*		
SD28	upland	10/28/1997	SD28	0	0	0	28 *UJ*	28 *UJ*		28 *UJ*		
SD29	upland	10/27/1997	SD29	0	0	0	15 *U*	15 *UJ*		15 *UJ*		
SD30	upland	10/29/1997	SD30	0	0	0	14 *U*	14 *U*		14 *U*		
SD31	river	10/30/1997	SD31	0	0	0	30 *UJ*	30 *UJ*		30 *UJ*		
SD32	upland	10/28/1997	SD32	0	0	0	21 *UJ*	21 *UJ*		21 *UJ*		
SD33	marsh	10/28/1997	SD33	0	0	0	26 *UJ*	26 *UJ*		26 *UJ*		
SD34	upland	10/30/1997	SD34	0	0	0	18 *U*	18 *UJ*		18 *U*		
SD35	marsh	10/30/1997	SD35	0	0	0	23 *UJ*	23 *UJ*		23 *UJ*		
SD36	marsh	10/30/1997	SD36	0	0	0	15 *U*	15 *UJ*		15 *U*		
SD37	marsh	10/30/1997	SD37	A	0	0	12 *U*	12 *UJ*		12 *U*		
SD37	marsh	10/30/1997	SD37	B	0	0	12 *UJ*	12 *UJ*		12 *UJ*		
SD38	river	6/24/1998	SD38	0	0	0	33 *UJ*	33 *UJ*		33 *UJ*		
SD39	river	6/24/1998	SD39	A	0	0	28 *UJ*	28 *UJ*		28 *UJ*		
SD39	river	6/24/1998	SD39	B	0	0	29 *UJ*	29 *UJ*		29 *UJ*		

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Chloroform (µg/kg dry)	Chloromethane (µg/kg dry)	cis-1,2-Dichloroethene (µg/kg dry)	cis-1,3-Dichloro-propene (µg/kg dry)	Cyclohexane (µg/kg dry)	Dichlorodifluoro methane (µg/kg dry)
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	23 *UJ*	23 *UJ*	3.0 *J*	23 *UJ*	23 *UJ*	23 *UJ*
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	22 *UJ*	22 *UJ*	5.0 *J*	22 *UJ*	22 *UJ*	22 *UJ*
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	18 *UJ*	18 *UJ*	5.0 *J*	18 *UJ*	18 *UJ*	18 *UJ*
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	25 *UJ*	25 *UJ*	6.0 *J*	25 *UJ*	25 *UJ*	25 *UJ*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	28 *UJ*	7.0 *J*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	17 *UJ*	17 *UJ*	17 *UJ*	17 *UJ*	17 *UJ*	17 *UJ*
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	94 *UJ*	94 *UJ*	94 *UJ*	94 *UJ*	94 *UJ*	94 *UJ*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	96 *UJ*	96 *UJ*	96 *UJ*	96 *UJ*	96 *UJ*	96 *UJ*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	68 *UJ*	15 *J*	68 *UJ*	68 *UJ*	68 *UJ*	68 *UJ*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	42 *UJ*	42 *UJ*	42 *UJ*	42 *UJ*	42 *UJ*	42 *UJ*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	13 *UJ*	13 *UJ*	3.0 *J*	13 *UJ*	13 *UJ*	13 *UJ*
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	36 *UJ*	36 *UJ*	36 *UJ*	36 *UJ*	36 *UJ*	36 *UJ*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Chloroform (µg/kg dry)	Chloromethane (µg/kg dry)	cis-1,2-Dichloroethene (µg/kg dry)	cis-1,3-Dichloro-propene (µg/kg dry)	Cyclohexane (µg/kg dry)	Dichlorodifluoro methane (µg/kg dry)
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	22 *UJ*	7.0 *J*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*

Note:
Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Methylene Chloride (µg/kg dry)	Ethylbenzene (µg/kg dry)	Isopropyl-benzene (µg/kg dry)	Methyl Acetate (µg/kg dry)	Methyl-tert-butyl ether (µg/kg dry)	Methylcyclohexane Methanol (µg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	29	29	29	29	29	29
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	53 *UJ*	14 *UJ*	14 *UJ*	14 *UJ*	14 *UJ*	14 *UJ*
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	76 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	24 *UJ*	16 *UJ*	16 *UJ*	16 *UJ*	16 *UJ*	16 *UJ*
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	67 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*	4.0 *J*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	39 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	98 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	100 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	62 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	4.0 *J*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	110 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	3.0 *J*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	37 *UJ*	37 *UJ*	37 *UJ*	37 *UJ*	37 *UJ*	37 *UJ*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	33 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	500 *J*	69 *UJ*	69 *UJ*	69 *UJ*	69 *UJ*	69 *UJ*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	83 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	77 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	130 *UJ*	38 *UJ*	38 *UJ*	38 *UJ*	38 *UJ*	38 *UJ*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	390 *J*	84 *UJ*	84 *UJ*	84 *UJ*	84 *UJ*	84 *UJ*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	90 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	58 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	89 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6	150 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	81 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	72 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	120 *UJ*	38 *UJ*	38 *UJ*	38 *UJ*	38 *UJ*	38 *UJ*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	75 *UJ*	36 *UJ*	36 *UJ*	36 *UJ*	36 *UJ*	36 *UJ*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	36 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	71 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	69 *UJ*	31 *UJ*	31 *UJ*	31 *UJ*	31 *UJ*	31 *UJ*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	89 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	32 *UJ*	27 *U*	27 *U*	5.0 *J*	27 *U*	27 *U*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Methylene Chloride (µg/kg dry)	Ethylbenzene (µg/kg dry)	Isopropyl-benzene (µg/kg dry)	Methyl Acetate (µg/kg dry)	Methyl-tert-butyl ether (µg/kg dry)	Methylcyclohexane Methanol (µg/kg dry)
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	34 *UJ*	34 *U*	34 *U*	5.0 *J*	34 *U*	34 *U*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	44 *J*	27 *UJ*	27 *UJ*	8.0 *J*	27 *UJ*	27 *UJ*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	68 *J*	26 *U*	26 *U*	6.0 *J*	26 *U*	26 *U*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	50 *J*	23 *U*	23 *U*	10 *J*	23 *U*	23 *U*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	64 *UJ*	29 *U*	29 *U*	4.0 *J*	29 *U*	29 *U*
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	90 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	41 *UJ*	22 *U*	22 *U*	22 *U*	22 *U*	22 *U*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	52 *UJ*	24 *U*	24 *U*	24 *U*	24 *U*	24 *U*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	51 *UJ*	30 *UJ*	30 *UJ*	30 *UJ*	30 *UJ*	30 *UJ*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	72 *J*	35 *UJ*	20 *J*	18 *J*	35 *UJ*	35 *UJ*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	95 *J*	35 *UJ*	61 *J*	26 *J*	35 *UJ*	35 *UJ*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	66 *J*	34 *UJ*	34 *UJ*	22 *J*	34 *UJ*	34 *UJ*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	230 *J*	45 *UJ*	45 *UJ*	35 *J*	45 *UJ*	45 *UJ*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	69 *UJ*	16 *U*	16 *U*	16 *U*	16 *U*	16 *U*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	63 *UJ*	18 *U*	18 *U*	18 *U*	18 *U*	18 *U*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	76 *UJ*	24 *UJ*	24 *UJ*	15 *J*	24 *UJ*	24 *UJ*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	100 *UJ*	42 *UJ*	42 *UJ*	12 *J*	42 *UJ*	42 *UJ*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	44 *UJ*	18 *U*	18 *U*	18 *U*	18 *U*	18 *U*
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	34 *UJ*	13 *U*	13 *U*	13 *U*	13 *U*	13 *U*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	89 *UJ*	31 *UJ*	31 *UJ*	31 *UJ*	31 *UJ*	31 *UJ*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	18 *UJ*	18 *U*	18 *U*	18 *U*	18 *U*	18 *U*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	22 *UJ*	22 *U*	22 *U*	22 *U*	22 *U*	22 *U*
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	27 *UJ*	27 *U*	27 *U*	27 *U*	27 *U*	27 *U*
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	61 *J*	24 *UJ*	24 *UJ*	8.0 *J*	24 *UJ*	24 *UJ*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	23 *J*	17 *UJ*	17 *UJ*	5.0 *J*	17 *UJ*	17 *UJ*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	35 *UJ*	22 *U*	22 *U*	2.0 *J*	22 *U*	22 *U*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	37 *UJ*	22 *U*	22 *U*	22 *U*	22 *U*	22 *U*
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	33 *J*	21 *UJ*	21 *UJ*	6.0 *J*	21 *UJ*	21 *UJ*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	110 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	97 *UJ*	36 *UJ*	3.0 *J*	36 *UJ*	36 *UJ*	36 *UJ*
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	84 *UJ*	31 *UJ*	3.0 *J*	31 *UJ*	31 *UJ*	31 *UJ*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	95 *UJ*	28 *UJ*	2.0 *J*	28 *UJ*	28 *UJ*	28 *UJ*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	160 *J*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	96 *UJ*	35 *UJ*	10 *J*	35 *UJ*	35 *UJ*	35 *UJ*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	80 *UJ*	29 *UJ*	2.0 *J*	29 *UJ*	29 *UJ*	29 *UJ*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	110 *J*	32 *UJ*	6.0 *J*	32 *UJ*	32 *UJ*	32 *UJ*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Methylene Chloride (µg/kg dry)	Ethylbenzene (µg/kg dry)	Isopropyl-benzene (µg/kg dry)	Methyl Acetate (µg/kg dry)	Methyl-tert-butyl ether (µg/kg dry)	Methylcyclohexane Methanol (µg/kg dry)
SD01	Ruplnd	10/23/1997	SD01	0	0	0	16 *U*	16 *U*				
SD02	Ruplnd	10/24/1997	SD02	0	0	0	14 *U*	14 *U*				
SD03	upland	10/23/1997	SD03	0	0	0	18 *U*	18 *U*				
SD04	upland	10/24/1997	SD04	0	0	0	18 *U*	18 *U*				
SD05	upland	10/23/1997	SD05	0	0	0	15 *U*	15 *U*				
SD06	upland	10/23/1997	SD06	0	0	0	56 *UJ*	56 *UJ*				
SD07	upland	10/23/1997	SD07	0	0	0	31 *UJ*	580 *J*				
SD08	upland	10/23/1997	SD08	0	0	0	16 *U*	9.0 *J*				
SD09	upland	10/28/1997	SD09	0	0	0	25 *UJ*	25 *UJ*				
SD10	upland	10/28/1997	SD10	0	0	0	38 *UJ*	38 *UJ*				
SD11	upland	10/28/1997	SD11	0	0	0	48 *UJ*	48 *UJ*				
SD12	upland	10/28/1997	SD12	0	0	0	32 *UJ*	32 *UJ*				
SD13	upland	10/27/1997	SD13	0	0	0	16 *U*	16 *U*				
SD14	upland	10/27/1997	SD14	0	0	0	19 *U*	19 *U*				
SD15	upland	10/24/1997	SD15	0	0	0	12 *U*	2.0 *J*				
SD16	upland	10/27/1997	SD16	0	0	0	17 *U*	17 *U*				
SD17	upland	10/27/1997	SD17	0	0	0	20 *U*	20 *U*				
SD18	upland	10/29/1997	SD18	0	0	0	18 *U*	18 *U*				
SD19	upland	10/24/1997	SD19	0	0	0	12 *U*	12 *U*				
SD20	upland	10/24/1997	SD20	A	0	0	11 *U*	11 *U*				
SD20	upland	10/24/1997	SD20	B	0	0	11 *U*	11 *U*				
SD21	Ruplnd	10/24/1997	SD21	0	0	0	11 *U*	11 *U*				
SD22	upland	10/24/1997	SD22	0	0	0	12 *U*	12 *U*				
SD23	upland	10/24/1997	SD23	0	0	0	11 *U*	11 *U*				
SD24	river	10/27/1997	SD24	0	0	0	29 *UJ*	29 *UJ*				
SD25	river	10/29/1997	SD25	0	0	0	30 *UJ*	30 *UJ*				
SD26	marsh	10/29/1997	SD26	0	0	0	59 *UJ*	59 *UJ*				
SD27	river	10/30/1997	SD27	0	0	0	38 *UJ*	38 *UJ*				
SD28	upland	10/28/1997	SD28	0	0	0	28 *UJ*	28 *UJ*				
SD29	upland	10/27/1997	SD29	0	0	0	15 *U*	15 *U*				
SD30	upland	10/29/1997	SD30	0	0	0	14 *U*	14 *U*				
SD31	river	10/30/1997	SD31	0	0	0	30 *UJ*	30 *UJ*				
SD32	upland	10/28/1997	SD32	0	0	0	21 *UJ*	21 *UJ*				
SD33	marsh	10/28/1997	SD33	0	0	0	26 *UJ*	26 *UJ*				
SD34	upland	10/30/1997	SD34	0	0	0	18 *U*	18 *U*				
SD35	marsh	10/30/1997	SD35	0	0	0	23 *UJ*	23 *UJ*				
SD36	marsh	10/30/1997	SD36	0	0	0	15 *U*	15 *U*				
SD37	marsh	10/30/1997	SD37	A	0	0	14 *U*	12 *U*				
SD37	marsh	10/30/1997	SD37	B	0	0	12 *UJ*	12 *UJ*				
SD38	river	6/24/1998	SD38	0	0	0	65 *UJ*	33 *UJ*				
SD39	river	6/24/1998	SD39	A	0	0	28 *UJ*	28 *UJ*				
SD39	river	6/24/1998	SD39	B	0	0	32 *UJ*	29 *UJ*				

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Methylene Chloride (µg/kg dry)	Ethylbenzene (µg/kg dry)	Isopropyl-benzene (µg/kg dry)	Methyl Acetate (µg/kg dry)	Methyl-tert-butyl ether (µg/kg dry)	Methylcyclohexane Methanol (µg/kg dry)
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	17 *UJ*	17 *UJ*	17 *UJ*	17 *UJ*	17 *UJ*	17 *UJ*
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	94 *UJ*	94 *UJ*	94 *UJ*	94 *UJ*	94 *UJ*	94 *UJ*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	96 *UJ*	96 *UJ*	96 *UJ*	96 *UJ*	96 *UJ*	96 *UJ*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	68 *UJ*	68 *UJ*	68 *UJ*	68 *UJ*	68 *UJ*	68 *UJ*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	42 *UJ*	42 *UJ*	42 *UJ*	42 *UJ*	42 *UJ*	42 *UJ*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	2.0 *J*	13 *UJ*	13 *UJ*	13 *UJ*	13 *UJ*	13 *UJ*
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	36 *UJ*	65 *J*	13 *J*	36 *UJ*	36 *UJ*	55 *J*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Methylene Chloride (µg/kg dry)	Ethylbenzene (µg/kg dry)	Isopropyl-benzene (µg/kg dry)	Methyl Acetate (µg/kg dry)	Methyl-tert-butyl ether (µg/kg dry)	Methylcyclohexane Methanol (µg/kg dry)
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	26 *UJ*	3.0 *J*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	22 *UJ*	25	18 *J*	22 *UJ*	22 *UJ*	6,700 *J*
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*

Note: Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Styrene (µg/kg dry)	Tetrachloro-ethene (µg/kg dry)	Toluene (µg/kg dry)	trans-1,2-Dichloroethene (µg/kg dry)	trans-1,3-Dichloro-propene (µg/kg dry)	Bromoform (µg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	29	29	29	29	29	29
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	14 *UJ*	14 *UJ*	2.0 *J*	14 *UJ*	14 *UJ*	14 *UJ*
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	19 *UJ*	19 *UJ*	4.0 *J*	19 *UJ*	19 *UJ*	19 *UJ*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	16 *UJ*	16 *UJ*	16 *UJ*	16 *UJ*	16 *UJ*	16 *UJ*
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	18 *UJ*	18 *UJ*	4.0 *J*	18 *UJ*	18 *UJ*	18 *UJ*
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	39 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*	39 *UJ*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	34 *UJ*	34 *UJ*	8.0 *J*	34 *UJ*	34 *UJ*	34 *UJ*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	35 *UJ*	35 *UJ*	11 *J*	35 *UJ*	35 *UJ*	35 *UJ*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	28 *UJ*	28 *UJ*	5.0 *J*	28 *UJ*	28 *UJ*	28 *UJ*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	33 *UJ*	33 *UJ*	9.0 *J*	33 *UJ*	33 *UJ*	33 *UJ*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*	27 *UJ*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	37 *UJ*	37 *UJ*	37 *UJ*	37 *UJ*	37 *UJ*	37 *UJ*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	33 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*	33 *UJ*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	69 *UJ*	69 *UJ*	54 *J*	69 *UJ*	69 *UJ*	69 *UJ*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	27 *UJ*	27 *UJ*	7.0 *J*	27 *UJ*	27 *UJ*	27 *UJ*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	26 *UJ*	26 *UJ*	8.0 *J*	26 *UJ*	26 *UJ*	26 *UJ*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	38 *UJ*	38 *UJ*	11 *J*	38 *UJ*	38 *UJ*	38 *UJ*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	84 *UJ*	84 *UJ*	32 *J*	84 *UJ*	84 *UJ*	84 *UJ*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	35 *UJ*	35 *UJ*	7.0 *J*	35 *UJ*	35 *UJ*	35 *UJ*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	26 *UJ*	26 *UJ*	7.0 *J*	26 *UJ*	26 *UJ*	26 *UJ*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	35 *UJ*	35 *UJ*	7.0 *J*	35 *UJ*	35 *UJ*	35 *UJ*
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6	39 *UJ*	39 *UJ*	9.0 *J*	39 *UJ*	39 *UJ*	39 *UJ*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	33 *UJ*	33 *UJ*	8.0 *J*	33 *UJ*	33 *UJ*	33 *UJ*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	32 *UJ*	32 *UJ*	6.0 *J*	32 *UJ*	32 *UJ*	32 *UJ*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	38 *UJ*	38 *UJ*	9.0 *J*	38 *UJ*	38 *UJ*	38 *UJ*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	36 *UJ*	36 *UJ*	5.0 *J*	36 *UJ*	36 *UJ*	36 *UJ*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*	29 *UJ*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	28 *UJ*	28 *UJ*	5.0 *J*	28 *UJ*	28 *UJ*	28 *UJ*
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	31 *UJ*	31 *UJ*	4.0 *J*	31 *UJ*	31 *UJ*	31 *UJ*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*	45 *UJ*
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	27 *U*	27 *U*	27 *U*	27 *U*	27 *U*	27 *U*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Styrene (µg/kg dry)	Tetrachloro-ethene (µg/kg dry)	Toluene (µg/kg dry)	trans-1,2-Dichloroethene (µg/kg dry)	trans-1,3-Dichloro-propene (µg/kg dry)	Bromoform (µg/kg dry)
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	34 *U*	34 *U*	34 *U*	34 *U*	34 *U*	34 *U*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	27 *UJ*	27 *UJ*	3.0 *J*	27 *UJ*	27 *UJ*	27 *UJ*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*	35 *UJ*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*	28 *UJ*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	26 *U*	26 *U*	5.0 *J*	26 *U*	26 *U*	26 *U*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	23 *U*	23 *U*	4.0 *J*	23 *U*	23 *U*	23 *U*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	29 *U*	29 *U*	29 *U*	29 *U*	29 *U*	29 *U*
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	45 *UJ*	45 *UJ*	8.0 *J*	45 *UJ*	45 *UJ*	45 *UJ*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	22 *U*	22 *U*	4.0 *J*	22 *U*	22 *U*	22 *U*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	24 *U*	24 *U*	5.0 *J*	24 *U*	24 *U*	24 *U*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	30 *UJ*	30 *UJ*	5.0 *J*	30 *UJ*	30 *UJ*	30 *UJ*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	35 *UJ*	35 *UJ*	4.0 *J*	35 *UJ*	35 *UJ*	35 *UJ*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	35 *UJ*	35 *UJ*	7.0 *J*	35 *UJ*	35 *UJ*	35 *UJ*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	34 *UJ*	34 *UJ*	5.0 *J*	34 *UJ*	34 *UJ*	34 *UJ*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	45 *UJ*	45 *UJ*	25 *J*	45 *UJ*	45 *UJ*	45 *UJ*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	16 *U*	16 *U*	6.0 *J*	16 *U*	16 *U*	16 *U*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	18 *U*	18 *U*	4.0 *J*	18 *U*	18 *U*	18 *U*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	24 *UJ*	24 *UJ*	6.0 *J*	24 *UJ*	24 *UJ*	24 *UJ*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	42 *UJ*	42 *UJ*	9.0 *J*	42 *UJ*	42 *UJ*	42 *UJ*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	18 *U*	18 *U*	3.0 *J*	18 *U*	18 *U*	18 *U*
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	13 *U*	13 *U*	2.0 *J*	13 *U*	13 *U*	13 *U*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	31 *UJ*	31 *UJ*	8.0 *J*	31 *UJ*	31 *UJ*	31 *UJ*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	18 *U*	18 *U*	18 *U*	18 *U*	18 *U*	18 *U*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	22 *U*	22 *U*	22 *U*	22 *U*	22 *U*	22 *U*
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	27 *U*	27 *U*	27 *U*	27 *U*	27 *U*	27 *U*
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	24 *UJ*	24 *UJ*	5.0 *J*	24 *UJ*	24 *UJ*	24 *UJ*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	17 *UJ*	17 *UJ*	2.0 *J*	17 *UJ*	17 *UJ*	17 *UJ*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	22 *U*	22 *U*	22 *U*	22 *U*	22 *U*	22 *U*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	22 *U*	22 *U*	22 *U*	22 *U*	22 *U*	22 *U*
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	21 *UJ*	21 *UJ*	2.0 *J*	21 *UJ*	21 *UJ*	21 *UJ*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	39 *UJ*	39 *UJ*	11 *J*	39 *UJ*	39 *UJ*	39 *UJ*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	36 *UJ*	36 *UJ*	8.0 *J*	36 *UJ*	36 *UJ*	36 *UJ*
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	31 *UJ*	31 *UJ*	9.0 *J*	31 *UJ*	31 *UJ*	31 *UJ*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	28 *UJ*	28 *UJ*	10 *J*	28 *UJ*	28 *UJ*	28 *UJ*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	32 *UJ*	32 *UJ*	13 *J*	32 *UJ*	32 *UJ*	32 *UJ*
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	35 *UJ*	35 *UJ*	12 *J*	35 *UJ*	35 *UJ*	35 *UJ*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	29 *UJ*	29 *UJ*	8.0 *J*	29 *UJ*	29 *UJ*	29 *UJ*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	32 *UJ*	32 *UJ*	14 *J*	32 *UJ*	32 *UJ*	32 *UJ*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Styrene (µg/kg dry)	Tetrachloro-ethene (µg/kg dry)	Toluene (µg/kg dry)	trans-1,2-Dichloroethene (µg/kg dry)	trans-1,3-Dichloro-propene (µg/kg dry)	Bromoform (µg/kg dry)
SD01	Ruplnd	10/23/1997	SD01	0	0	0	16 *U*	16 *U*	16 *U*		16 *U*	16 *U*
SD02	Ruplnd	10/24/1997	SD02	0	0	0	14 *U*	14 *U*	14 *U*		14 *U*	14 *U*
SD03	upland	10/23/1997	SD03	0	0	0	18 *U*	18 *U*	18 *U*		18 *U*	18 *U*
SD04	upland	10/24/1997	SD04	0	0	0	18 *U*	18 *U*	18 *U*		18 *U*	18 *U*
SD05	upland	10/23/1997	SD05	0	0	0	15 *U*	15 *U*	15 *U*		15 *U*	15 *U*
SD06	upland	10/23/1997	SD06	0	0	0	56 *UJ*	56 *UJ*	56 *UJ*		56 *UJ*	56 *UJ*
SD07	upland	10/23/1997	SD07	0	0	0	31 *UJ*	31 *UJ*	60 *J*		31 *UJ*	31 *UJ*
SD08	upland	10/23/1997	SD08	0	0	0	16 *U*	16 *U*	2.0 *J*		16 *U*	16 *U*
SD09	upland	10/28/1997	SD09	0	0	0	25 *UJ*	25 *UJ*	25 *UJ*		25 *UJ*	25 *UJ*
SD10	upland	10/28/1997	SD10	0	0	0	38 *UJ*	38 *UJ*	38 *UJ*		38 *UJ*	38 *UJ*
SD11	upland	10/28/1997	SD11	0	0	0	48 *UJ*	48 *UJ*	48 *UJ*		48 *UJ*	48 *UJ*
SD12	upland	10/28/1997	SD12	0	0	0	32 *UJ*	32 *UJ*	32 *UJ*		32 *UJ*	32 *UJ*
SD13	upland	10/27/1997	SD13	0	0	0	16 *U*	16 *U*	16 *U*		16 *UJ*	16 *U*
SD14	upland	10/27/1997	SD14	0	0	0	19 *U*	19 *U*	19 *U*		19 *UJ*	19 *U*
SD15	upland	10/24/1997	SD15	0	0	0	12 *U*	2.0 *J*	12 *U*		12 *UJ*	12 *U*
SD16	upland	10/27/1997	SD16	0	0	0	17 *U*	17 *U*	17 *U*		17 *UJ*	17 *U*
SD17	upland	10/27/1997	SD17	0	0	0	20 *U*	20 *U*	20 *U*		20 *UJ*	20 *U*
SD18	upland	10/29/1997	SD18	0	0	0	18 *U*	18 *U*	18 *U*		18 *U*	18 *U*
SD19	upland	10/24/1997	SD19	0	0	0	12 *U*	12 *U*	12 *U*		12 *U*	12 *U*
SD20	upland	10/24/1997	SD20	A	0	0	11 *U*	11 *U*	11 *U*		11 *U*	11 *U*
SD20	upland	10/24/1997	SD20	B	0	0	11 *U*	11 *U*	11 *U*		11 *U*	11 *U*
SD21	Ruplnd	10/24/1997	SD21	0	0	0	11 *U*	11 *U*	11 *U*		11 *U*	11 *U*
SD22	upland	10/24/1997	SD22	0	0	0	12 *U*	2.0 *J*	12 *U*		12 *U*	12 *U*
SD23	upland	10/24/1997	SD23	0	0	0	11 *U*	11 *U*	11 *U*		11 *U*	11 *U*
SD24	river	10/27/1997	SD24	0	0	0	29 *UJ*	29 *UJ*	29 *UJ*		29 *UJ*	29 *UJ*
SD25	river	10/29/1997	SD25	0	0	0	30 *UJ*	30 *UJ*	30 *UJ*		30 *UJ*	30 *UJ*
SD26	marsh	10/29/1997	SD26	0	0	0	59 *UJ*	59 *UJ*	59 *UJ*		59 *UJ*	59 *UJ*
SD27	river	10/30/1997	SD27	0	0	0	38 *UJ*	38 *UJ*	38 *UJ*		38 *UJ*	38 *UJ*
SD28	upland	10/28/1997	SD28	0	0	0	28 *UJ*	28 *UJ*	28 *UJ*		28 *UJ*	28 *UJ*
SD29	upland	10/27/1997	SD29	0	0	0	15 *U*	15 *U*	15 *U*		15 *UJ*	15 *U*
SD30	upland	10/29/1997	SD30	0	0	0	14 *U*	14 *U*	14 *U*		14 *U*	14 *U*
SD31	river	10/30/1997	SD31	0	0	0	30 *UJ*	30 *UJ*	30 *UJ*		30 *UJ*	30 *UJ*
SD32	upland	10/28/1997	SD32	0	0	0	21 *UJ*	21 *UJ*	21 *UJ*		21 *UJ*	21 *UJ*
SD33	marsh	10/28/1997	SD33	0	0	0	26 *UJ*	26 *UJ*	26 *UJ*		26 *UJ*	26 *UJ*
SD34	upland	10/30/1997	SD34	0	0	0	18 *U*	18 *U*	18 *U*		18 *U*	18 *U*
SD35	marsh	10/30/1997	SD35	0	0	0	23 *UJ*	23 *UJ*	23 *UJ*		23 *UJ*	23 *UJ*
SD36	marsh	10/30/1997	SD36	0	0	0	15 *U*	15 *U*	15 *U*		15 *U*	15 *U*
SD37	marsh	10/30/1997	SD37	A	0	0	12 *U*	12 *U*	12 *U*		12 *U*	12 *U*
SD37	marsh	10/30/1997	SD37	B	0	0	12 *UJ*	12 *UJ*	12 *UJ*		12 *UJ*	12 *UJ*
SD38	river	6/24/1998	SD38	0	0	0	33 *UJ*	33 *UJ*	33 *UJ*		33 *UJ*	33 *UJ*
SD39	river	6/24/1998	SD39	A	0	0	28 *UJ*	28 *UJ*	28 *UJ*		28 *UJ*	28 *UJ*
SD39	river	6/24/1998	SD39	B	0	0	29 *UJ*	29 *UJ*	29 *UJ*		29 *UJ*	29 *UJ*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Styrene (µg/kg dry)	Tetrachloro-ethene (µg/kg dry)	Toluene (µg/kg dry)	trans-1,2-Dichloroethene (µg/kg dry)	trans-1,3-Dichloro-propene (µg/kg dry)	Bromoform (µg/kg dry)
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	29 *UJ*	29 *UJ*	5.0 *J*	29 *UJ*	29 *UJ*	29 *UJ*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	23 *UJ*	23 *UJ*	3.0 *J*	23 *UJ*	23 *UJ*	23 *UJ*
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	32 *UJ*	32 *UJ*	3.0 *J*	32 *UJ*	32 *UJ*	32 *UJ*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*	57 *UJ*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*	32 *UJ*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	20 *UJ*	20 *UJ*	3.0 *J*	20 *UJ*	20 *UJ*	20 *UJ*
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	22 *UJ*	22 *UJ*	4.0 *J*	22 *UJ*	22 *UJ*	22 *UJ*
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	28 *UJ*	28 *UJ*	13 *J*	28 *UJ*	28 *UJ*	28 *UJ*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*	18 *UJ*
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	17 *UJ*	17 *UJ*	17 *UJ*	17 *UJ*	17 *UJ*	17 *UJ*
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	94 *UJ*	94 *UJ*	94 *UJ*	94 *UJ*	94 *UJ*	94 *UJ*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*	23 *UJ*
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*	34 *UJ*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	96 *UJ*	96 *UJ*	96 *UJ*	96 *UJ*	96 *UJ*	96 *UJ*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*	25 *UJ*
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*	22 *UJ*
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	68 *UJ*	68 *UJ*	68 *UJ*	68 *UJ*	68 *UJ*	68 *UJ*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*	24 *UJ*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*	21 *UJ*
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	42 *UJ*	42 *UJ*	42 *UJ*	42 *UJ*	42 *UJ*	42 *UJ*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	13 *UJ*	13 *UJ*	13 *UJ*	13 *UJ*	13 *UJ*	13 *UJ*
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	36 *UJ*	36 *UJ*	13 *J*	36 *UJ*	36 *UJ*	36 *UJ*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Styrene (µg/kg dry)	Tetrachloro-ethene (µg/kg dry)	Toluene (µg/kg dry)	trans-1,2-Dichloroethene (µg/kg dry)	trans-1,3-Dichloro-propene (µg/kg dry)	Bromoform (µg/kg dry)
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*	26 *UJ*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	22 *UJ*	22 *UJ*	6.0 *J*	22 *UJ*	22 *UJ*	22 *UJ*
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	19 *UJ*	19 *UJ*	7.0 *J*	19 *UJ*	19 *UJ*	19 *UJ*
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*	20 *UJ*
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*	15 *UJ*
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*	19 *UJ*

Note: Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Trichloroethene (µg/kg dry)	Vinyl Chloride (µg/kg dry)	Xylene isomers (total) (µg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	26 *UJ*	26 *UJ*	26 *UJ*
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	29 *UJ*	29 *UJ*	29 *UJ*
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	27 *UJ*	27 *UJ*	27 *UJ*
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	29	29	29
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	14 *UJ*	14 *UJ*	14 *UJ*
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	19 *UJ*	19 *UJ*	19 *UJ*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	16 *UJ*	16 *UJ*	16 *UJ*
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	18 *UJ*	18 *UJ*	18 *UJ*
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	32 *UJ*	32 *UJ*	32 *UJ*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	35 *UJ*	35 *UJ*	35 *UJ*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	34 *UJ*	34 *UJ*	34 *UJ*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	39 *UJ*	39 *UJ*	39 *UJ*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	34 *UJ*	34 *UJ*	34 *UJ*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	35 *UJ*	35 *UJ*	35 *UJ*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	28 *UJ*	28 *UJ*	28 *UJ*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	33 *UJ*	33 *UJ*	33 *UJ*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	21 *UJ*	21 *UJ*	21 *UJ*
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	28 *UJ*	28 *UJ*	28 *UJ*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	28 *UJ*	28 *UJ*	28 *UJ*
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	27 *UJ*	27 *UJ*	27 *UJ*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	37 *UJ*	37 *UJ*	37 *UJ*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	33 *UJ*	33 *UJ*	33 *UJ*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	35 *UJ*	35 *UJ*	35 *UJ*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	45 *UJ*	45 *UJ*	45 *UJ*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	69 *UJ*	69 *UJ*	69 *UJ*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	27 *UJ*	27 *UJ*	27 *UJ*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	26 *UJ*	26 *UJ*	26 *UJ*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	38 *UJ*	38 *UJ*	38 *UJ*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	84 *UJ*	84 *UJ*	84 *UJ*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	35 *UJ*	35 *UJ*	35 *UJ*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	26 *UJ*	26 *UJ*	26 *UJ*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	35 *UJ*	35 *UJ*	35 *UJ*
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6	39 *UJ*	39 *UJ*	39 *UJ*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	33 *UJ*	33 *UJ*	33 *UJ*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	32 *UJ*	32 *UJ*	32 *UJ*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	38 *UJ*	38 *UJ*	38 *UJ*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	36 *UJ*	36 *UJ*	36 *UJ*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	29 *UJ*	29 *UJ*	29 *UJ*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	28 *UJ*	28 *UJ*	28 *UJ*
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	31 *UJ*	31 *UJ*	31 *UJ*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	45 *UJ*	45 *UJ*	45 *UJ*
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	27 *U*	27 *U*	27 *U*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Trichloroethene (µg/kg dry)	Vinyl Chloride (µg/kg dry)	Xylene isomers (total) (µg/kg dry)
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	34 *U*	34 *U*	34 *U*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	27 *UJ*	27 *UJ*	27 *UJ*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	35 *UJ*	35 *UJ*	35 *UJ*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	23 *UJ*	23 *UJ*	23 *UJ*
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	22 *UJ*	22 *UJ*	22 *UJ*
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	28 *UJ*	28 *UJ*	28 *UJ*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	26 *U*	26 *U*	26 *U*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	23 *U*	23 *U*	23 *U*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	29 *U*	29 *U*	29 *U*
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	25 *UJ*	25 *UJ*	25 *UJ*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	45 *UJ*	45 *UJ*	45 *UJ*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	22 *U*	22 *U*	22 *U*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	24 *U*	24 *U*	24 *U*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	30 *UJ*	30 *UJ*	30 *UJ*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	26 *UJ*	26 *UJ*	26 *UJ*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	35 *UJ*	35 *UJ*	35 *UJ*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	35 *UJ*	35 *UJ*	35 *UJ*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	34 *UJ*	34 *UJ*	34 *UJ*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	45 *UJ*	45 *UJ*	45 *UJ*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	16 *U*	16 *U*	16 *U*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	18 *U*	18 *U*	18 *U*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	24 *UJ*	24 *UJ*	24 *UJ*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	42 *UJ*	42 *UJ*	42 *UJ*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	18 *U*	18 *U*	18 *U*
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	13 *U*	13 *U*	13 *U*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	31 *UJ*	31 *UJ*	31 *UJ*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	18 *U*	18 *U*	18 *U*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	22 *U*	22 *U*	22 *U*
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	27 *U*	27 *U*	27 *U*
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	24 *UJ*	24 *UJ*	24 *UJ*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	17 *UJ*	17 *UJ*	17 *UJ*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	22 *U*	22 *U*	22 *U*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	22 *U*	22 *U*	22 *U*
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	21 *UJ*	21 *UJ*	21 *UJ*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	39 *UJ*	39 *UJ*	39 *UJ*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	36 *UJ*	36 *UJ*	36 *UJ*
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	31 *UJ*	31 *UJ*	31 *UJ*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	28 *UJ*	28 *UJ*	28 *UJ*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	32 *UJ*	32 *UJ*	32 *UJ*
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	35 *UJ*	35 *UJ*	7.0 *J*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	29 *UJ*	29 *UJ*	29 *UJ*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	32 *UJ*	32 *UJ*	6.0 *J*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Trichloroethene (µg/kg dry)	Vinyl Chloride (µg/kg dry)	Xylene isomers (total) (µg/kg dry)
SD01	Ruplnd	10/23/1997	SD01	0	0	0	16 *U*	16 *U*	16 *U*
SD02	Ruplnd	10/24/1997	SD02	0	0	0	14 *U*	14 *U*	14 *U*
SD03	upland	10/23/1997	SD03	0	0	0	18 *U*	18 *U*	18 *U*
SD04	upland	10/24/1997	SD04	0	0	0	18 *U*	18 *U*	18 *U*
SD05	upland	10/23/1997	SD05	0	0	0	15 *U*	15 *U*	15 *U*
SD06	upland	10/23/1997	SD06	0	0	0	56 *UJ*	56 *UJ*	56 *UJ*
SD07	upland	10/23/1997	SD07	0	0	0	31 *UJ*	31 *UJ*	300 *J*
SD08	upland	10/23/1997	SD08	0	0	0	16 *U*	16 *U*	12 *J*
SD09	upland	10/28/1997	SD09	0	0	0	25 *UJ*	25 *UJ*	25 *UJ*
SD10	upland	10/28/1997	SD10	0	0	0	38 *UJ*	38 *UJ*	38 *UJ*
SD11	upland	10/28/1997	SD11	0	0	0	48 *UJ*	48 *UJ*	48 *UJ*
SD12	upland	10/28/1997	SD12	0	0	0	32 *UJ*	32 *UJ*	32 *UJ*
SD13	upland	10/27/1997	SD13	0	0	0	16 *U*	16 *U*	16 *U*
SD14	upland	10/27/1997	SD14	0	0	0	19 *U*	19 *U*	19 *U*
SD15	upland	10/24/1997	SD15	0	0	0	12 *U*	12 *U*	12 *U*
SD16	upland	10/27/1997	SD16	0	0	0	17 *U*	17 *U*	17 *U*
SD17	upland	10/27/1997	SD17	0	0	0	20 *U*	20 *U*	20 *U*
SD18	upland	10/29/1997	SD18	0	0	0	18 *U*	18 *U*	18 *U*
SD19	upland	10/24/1997	SD19	0	0	0	12 *U*	12 *U*	12 *U*
SD20	upland	10/24/1997	SD20	A	0	0	11 *U*	11 *U*	11 *U*
SD20	upland	10/24/1997	SD20	B	0	0	11 *U*	11 *U*	11 *U*
SD21	Ruplnd	10/24/1997	SD21	0	0	0	11 *U*	11 *U*	11 *U*
SD22	upland	10/24/1997	SD22	0	0	0	3.0 *J*	12 *U*	12 *U*
SD23	upland	10/24/1997	SD23	0	0	0	11 *U*	11 *U*	11 *U*
SD24	river	10/27/1997	SD24	0	0	0	29 *UJ*	29 *UJ*	29 *UJ*
SD25	river	10/29/1997	SD25	0	0	0	30 *UJ*	30 *UJ*	30 *UJ*
SD26	marsh	10/29/1997	SD26	0	0	0	59 *UJ*	59 *UJ*	59 *UJ*
SD27	river	10/30/1997	SD27	0	0	0	38 *UJ*	38 *UJ*	38 *UJ*
SD28	upland	10/28/1997	SD28	0	0	0	28 *UJ*	28 *UJ*	28 *UJ*
SD29	upland	10/27/1997	SD29	0	0	0	15 *U*	15 *U*	15 *U*
SD30	upland	10/29/1997	SD30	0	0	0	14 *U*	14 *U*	14 *U*
SD31	river	10/30/1997	SD31	0	0	0	30 *UJ*	30 *UJ*	30 *UJ*
SD32	upland	10/28/1997	SD32	0	0	0	21 *UJ*	21 *UJ*	21 *UJ*
SD33	marsh	10/28/1997	SD33	0	0	0	26 *UJ*	26 *UJ*	26 *UJ*
SD34	upland	10/30/1997	SD34	0	0	0	18 *U*	18 *U*	18 *U*
SD35	marsh	10/30/1997	SD35	0	0	0	23 *UJ*	23 *UJ*	23 *UJ*
SD36	marsh	10/30/1997	SD36	0	0	0	15 *U*	15 *U*	15 *U*
SD37	marsh	10/30/1997	SD37	A	0	0	12 *U*	12 *U*	12 *U*
SD37	marsh	10/30/1997	SD37	B	0	0	12 *UJ*	12 *UJ*	12 *UJ*
SD38	river	6/24/1998	SD38	0	0	0	33 *UJ*	33 *UJ*	33 *UJ*
SD39	river	6/24/1998	SD39	A	0	0	28 *UJ*	28 *UJ*	28 *UJ*
SD39	river	6/24/1998	SD39	B	0	0	29 *UJ*	29 *UJ*	29 *UJ*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Trichloroethene (µg/kg dry)	Vinyl Chloride (µg/kg dry)	Xylene isomers (total) (µg/kg dry)
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	29 *UJ*	29 *UJ*	29 *UJ*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	22 *UJ*	22 *UJ*	22 *UJ*
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	23 *UJ*	23 *UJ*	23 *UJ*
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	23 *UJ*	23 *UJ*	23 *UJ*
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	32 *UJ*	32 *UJ*	32 *UJ*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	22 *UJ*	22 *UJ*	22 *UJ*
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	18 *UJ*	18 *UJ*	18 *UJ*
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	25 *UJ*	25 *UJ*	25 *UJ*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	57 *UJ*	57 *UJ*	57 *UJ*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	23 *UJ*	23 *UJ*	23 *UJ*
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	23 *UJ*	23 *UJ*	23 *UJ*
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	18 *UJ*	18 *UJ*	18 *UJ*
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	32 *UJ*	32 *UJ*	32 *UJ*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	24 *UJ*	24 *UJ*	24 *UJ*
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	23 *UJ*	23 *UJ*	23 *UJ*
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	22 *UJ*	22 *UJ*	22 *UJ*
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	4.0 *J*	20 *UJ*	20 *UJ*
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	20 *UJ*	20 *UJ*	20 *UJ*
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	23 *UJ*	23 *UJ*	23 *UJ*
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	4.0 *J*	22 *UJ*	22 *UJ*
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	28 *UJ*	28 *UJ*	28 *UJ*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	24 *UJ*	24 *UJ*	24 *UJ*
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	26 *UJ*	26 *UJ*	26 *UJ*
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	21 *UJ*	21 *UJ*	21 *UJ*
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	15 *UJ*	15 *UJ*	15 *UJ*
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	20 *UJ*	20 *UJ*	20 *UJ*
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	18 *UJ*	18 *UJ*	18 *UJ*
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	17 *UJ*	17 *UJ*	17 *UJ*
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	94 *UJ*	94 *UJ*	94 *UJ*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	25 *UJ*	25 *UJ*	25 *UJ*
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	23 *UJ*	23 *UJ*	23 *UJ*
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	34 *UJ*	34 *UJ*	34 *UJ*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	96 *UJ*	96 *UJ*	96 *UJ*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	25 *UJ*	25 *UJ*	25 *UJ*
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	22 *UJ*	22 *UJ*	22 *UJ*
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	68 *UJ*	68 *UJ*	68 *UJ*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	24 *UJ*	24 *UJ*	24 *UJ*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	19 *UJ*	19 *UJ*	19 *UJ*
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	21 *UJ*	21 *UJ*	21 *UJ*
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	42 *UJ*	42 *UJ*	42 *UJ*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	6.0 *J*	13 *UJ*	13 *UJ*
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	36 *UJ*	36 *UJ*	36 *UJ*

Table E-1. Volatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Trichloroethene (µg/kg dry)	Vinyl Chloride (µg/kg dry)	Xylene isomers (total) (µg/kg dry)
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	26 *UJ*	26 *UJ*	26 *UJ*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	22 *UJ*	22 *UJ*	22 *UJ*
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	19 *UJ*	19 *UJ*	19 *UJ*
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	20 *UJ*	20 *UJ*	20 *UJ*
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	15 *UJ*	15 *UJ*	15 *UJ*
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	19 *UJ*	19 *UJ*	19 *UJ*

Note: Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	2,4,5-Trichlorophenol (µg/kg dry)	2,4,6-Trichlorophenol (µg/kg dry)	2,4-Dichlorophenol (µg/kg dry)	2,4-Dimethylphenol (µg/kg dry)	2,4-Dinitrophenol (µg/kg dry)	2,4-Dinitrotoluene (µg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	1,500 *U*	600 *U*	600 *U*	600 *U*	1,500 *U*	600 *U*
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	1,700 *U*	660 *U*	660 *U*	660 *U*	1,700 *U*	660 *U*
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	1,600 *U*	620 *U*	620 *U*	620 *U*	1,600 *U*	620 *U*
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	1,700 *UJ*	670 *UJ*	670 *UJ*	670 *UJ*	1,700 *UJ*	670 *UJ*
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	1,100 *U*	420 *U*	420 *U*	420 *U*	1,100 *U*	420 *U*
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	1,200 *U*	500 *U*	500 *U*	500 *U*	1,200 *U*	500 *U*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	1,100 *U*	440 *U*	440 *U*	440 *U*	1,100 *U*	440 *U*
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	1,300 *U*	530 *U*	530 *U*	530 *U*	1,300 *U*	530 *U*
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	1,900 *UJ*	740 *UJ*	740 *UJ*	740 *UJ*	1,900 *UJ*	740 *UJ*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	1,900 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*	1,900 *UJ*	750 *UJ*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	1,800 *UJ*	700 *UJ*	700 *UJ*	700 *UJ*	1,800 *UJ*	700 *UJ*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	2,000 *UJ*	800 *UJ*	800 *UJ*	800 *UJ*	2,000 *UJ*	800 *UJ*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	2,000 *UJ*	780 *UJ*	780 *UJ*	780 *UJ*	2,000 *UJ*	780 *UJ*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	1,900 *UJ*	760 *UJ*	760 *UJ*	760 *UJ*	1,900 *UJ*	760 *UJ*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	1,800 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*	1,800 *UJ*	720 *UJ*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	2,000 *UJ*	780 *UJ*	780 *UJ*	780 *UJ*	2,000 *UJ*	780 *UJ*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	1,500 *U*	590 *U*	590 *U*	590 *U*	1,500 *UJ*	590 *U*
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	1,800 *UJ*	700 *UJ*	700 *UJ*	700 *UJ*	1,800 *UJ*	700 *UJ*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	1,600 *UJ*	640 *UJ*	640 *UJ*	640 *UJ*	1,600 *UJ*	640 *UJ*
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	1,700 *UJ*	700 *UJ*	700 *UJ*	700 *UJ*	1,700 *UJ*	700 *UJ*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	2,200 *UJ*	870 *UJ*	870 *UJ*	870 *UJ*	2,200 *UJ*	870 *UJ*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	2,000 *UJ*	790 *UJ*	790 *UJ*	790 *UJ*	2,000 *UJ*	790 *UJ*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	1,800 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*	1,800 *UJ*	720 *UJ*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	2,400 *UJ*	970 *UJ*	970 *UJ*	970 *UJ*	2,400 *UJ*	970 *UJ*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	3,000 *UJ*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	3,000 *UJ*	1,200 *UJ*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	1,800 *UJ*	700 *UJ*	700 *UJ*	700 *UJ*	1,800 *UJ*	1,900 *J*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	1,700 *UJ*	670 *UJ*	670 *UJ*	670 *UJ*	1,700 *UJ*	670 *UJ*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	2,000 *UJ*	780 *UJ*	780 *UJ*	780 *UJ*	2,000 *UJ*	780 *UJ*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	3,200 *UJ*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	3,200 *UJ*	1,300 *UJ*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	1,700 *UJ*	700 *UJ*	700 *UJ*	700 *UJ*	1,700 *UJ*	700 *UJ*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	1,700 *UJ*	680 *UJ*	680 *UJ*	680 *UJ*	1,700 *UJ*	680 *UJ*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	2,000 *UJ*	790 *UJ*	790 *UJ*	790 *UJ*	2,000 *UJ*	790 *UJ*
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6	2,100 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*	2,100 *UJ*	830 *UJ*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	1,900 *UJ*	770 *UJ*	770 *UJ*	770 *UJ*	1,900 *UJ*	770 *UJ*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	2,000 *UJ*	780 *UJ*	780 *UJ*	780 *UJ*	2,000 *UJ*	780 *UJ*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	2,100 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*	2,100 *UJ*	830 *UJ*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	2,200 *UJ*	860 *UJ*	860 *UJ*	860 *UJ*	2,200 *UJ*	860 *UJ*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	1,800 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*	1,800 *UJ*	720 *UJ*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	1,700 *UJ*	670 *UJ*	670 *UJ*	670 *UJ*	1,700 *UJ*	670 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	2,4,5-Trichlorophenol (µg/kg dry)	2,4,6-Trichlorophenol (µg/kg dry)	2,4-Dichlorophenol (µg/kg dry)	2,4-Dimethylphenol (µg/kg dry)	2,4-Dinitrophenol (µg/kg dry)	2,4-Dinitrotoluene (µg/kg dry)
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	130 *J*	770 *UJ*	230 *J*	770 *UJ*	830 *UJ*	830 *UJ*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	2,300 *UJ*	920 *UJ*	920 *UJ*	920 *UJ*	2,300 *UJ*	920 *UJ*
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	1,500 *U*	590 *U*	590 *U*	590 *U*	1,500 *U*	590 *U*
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	1,600 *U*	650 *U*	650 *U*	650 *U*	1,600 *U*	650 *U*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	1,900 *UJ*	750 *UJ*	750 *UJ*	320 *J*	1,900 *UJ*	750 *UJ*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	2,000 *UJ*	800 *UJ*	800 *UJ*	800 *UJ*	2,000 *UJ*	800 *UJ*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	1,500 *U*	590 *U*	590 *U*	590 *U*	1,500 *U*	590 *U*
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	1,500 *U*	600 *U*	600 *U*	600 *U*	1,500 *U*	600 *U*
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	1,600 *U*	650 *U*	650 *U*	650 *U*	1,600 *U*	650 *U*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	1,700 *U*	660 *U*	660 *U*	660 *U*	1,700 *U*	660 *U*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	1,400 *U*	580 *U*	580 *U*	580 *U*	1,400 *U*	580 *U*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	1,500 *U*	590 *U*	590 *U*	590 *U*	1,500 *U*	590 *U*
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	1,700 *UJ*	670 *UJ*	670 *UJ*	670 *UJ*	1,700 *UJ*	670 *UJ*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	2,100 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*	2,100 *UJ*	830 *UJ*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	1,500 *U*	610 *U*	610 *U*	610 *U*	1,500 *UJ*	610 *U*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	1,500 *U*	600 *U*	600 *U*	600 *U*	1,500 *UJ*	600 *U*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	1,800 *UJ*	700 *UJ*	700 *UJ*	700 *UJ*	1,800 *UJ*	700 *UJ*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	2,200 *UJ*	870 *UJ*	870 *UJ*	870 *UJ*	2,200 *UJ*	870 *UJ*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	1,900 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*	1,900 *UJ*	750 *UJ*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	2,100 *UJ*	820 *UJ*	820 *UJ*	820 *UJ*	2,100 *UJ*	820 *UJ*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	2,100 *UJ*	820 *UJ*	820 *UJ*	820 *UJ*	2,100 *UJ*	820 *UJ*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	2,400 *UJ*	970 *UJ*	970 *UJ*	970 *UJ*	2,400 *UJ*	970 *UJ*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	1,300 *U*	500 *U*	500 *U*	500 *U*	1,300 *UJ*	500 *U*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	1,400 *U*	550 *U*	550 *U*	550 *U*	1,400 *UJ*	550 *U*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	1,800 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*	1,800 *UJ*	720 *UJ*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	2,300 *UJ*	920 *UJ*	920 *UJ*	920 *UJ*	2,300 *UJ*	920 *UJ*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	1,100 *U*	450 *U*	450 *U*	450 *U*	1,100 *UJ*	450 *U*
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	1,100 *U*	450 *U*	450 *U*	450 *U*	1,100 *UJ*	450 *U*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	1,800 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*	1,800 *UJ*	720 *UJ*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	1,400 *U*	560 *U*	560 *U*	560 *U*	1,400 *U*	560 *U*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	1,500 *U*	610 *U*	610 *U*	610 *U*	1,500 *U*	610 *U*
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	1,600 *U*	620 *U*	620 *U*	620 *U*	1,600 *U*	620 *U*
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	1,500 *U*	590 *U*	590 *U*	590 *U*	1,500 *U*	590 *U*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	1,400 *U*	550 *U*	550 *U*	550 *U*	1,400 *U*	550 *U*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	1,400 *U*	570 *U*	570 *U*	570 *U*	1,400 *U*	570 *U*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	1,500 *U*	590 *U*	590 *U*	590 *U*	1,500 *U*	590 *U*
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	1,500 *U*	610 *U*	610 *U*	610 *U*	1,500 *U*	610 *U*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	2,200 *UJ*	890 *UJ*	890 *UJ*	890 *UJ*	2,200 *UJ*	890 *UJ*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	2,000 *UJ*	800 *UJ*	800 *UJ*	800 *UJ*	2,000 *UJ*	800 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	2,4,5-Trichlorophenol (µg/kg dry)	2,4,6-Trichlorophenol (µg/kg dry)	2,4-Dichlorophenol (µg/kg dry)	2,4-Dimethylphenol (µg/kg dry)	2,4-Dinitrophenol (µg/kg dry)	2,4-Dinitrotoluene (µg/kg dry)
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	5,700 *UJ*	2,300 *UJ*	2,300 *UJ*	2,300 *UJ*	5,700 *UJ*	2,300 *UJ*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	1,900 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*	1,900 *UJ*	750 *UJ*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	2,200 *UJ*	890 *UJ*	890 *UJ*	890 *UJ*	2,200 *UJ*	890 *UJ*
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	2,000 *UJ*	800 *UJ*	800 *UJ*	800 *UJ*	2,000 *UJ*	800 *UJ*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	1,900 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*	1,900 *UJ*	750 *UJ*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	1,800 *UJ*	730 *UJ*	730 *UJ*	730 *UJ*	1,800 *UJ*	730 *UJ*
SD01	Ruplnd	10/23/1997	SD01	0	0	0	1,300 *U*	520 *U*	520 *U*	520 *U*	1,300 *UJ*	520 *U*
SD02	Ruplnd	10/24/1997	SD02	0	0	0	1,200 *U*	470 *U*	470 *U*	470 *U*	1,200 *UJ*	470 *U*
SD03	upland	10/23/1997	SD03	0	0	0	1,400 *U*	580 *U*	580 *U*	580 *U*	1,400 *UJ*	580 *U*
SD04	upland	10/24/1997	SD04	0	0	0	1,500 *U*	600 *U*	600 *U*	600 *U*	1,500 *UJ*	600 *U*
SD05	upland	10/23/1997	SD05	0	0	0	2,500 *U*	1,000 *U*	1,000 *U*	1,000 *U*	2,500 *UJ*	1,000 *U*
SD06	upland	10/23/1997	SD06	0	0	0	4,400 *UJ*	1,700 *UJ*	1,700 *UJ*	1,700 *UJ*	4,400 *UJ*	1,700 *UJ*
SD07	upland	10/23/1997	SD07	0	0	0	12,000 *UJ*	5,000 *UJ*	5,000 *UJ*	5,000 *UJ*	12,000 *UJ*	5,000 *UJ*
SD08	upland	10/23/1997	SD08	0	0	0	19,000 *U*	7,700 *U*	7,700 *U*	7,700 *U*	19,000 *U*	7,700 *U*
SD09	upland	10/28/1997	SD09	0	0	0	2,100 *UJ*	820 *UJ*	820 *UJ*	820 *UJ*	2,100 *UJ*	820 *UJ*
SD10	upland	10/28/1997	SD10	0	0	0	3,200 *UJ*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	3,200 *UJ*	1,300 *UJ*
SD11	upland	10/28/1997	SD11	0	0	0	4,000 *UJ*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	4,000 *UJ*	1,600 *UJ*
SD12	upland	10/28/1997	SD12	0	0	0	2,700 *UJ*	1,100 *UJ*	1,100 *UJ*	1,100 *UJ*	2,700 *UJ*	1,100 *UJ*
SD13	upland	10/27/1997	SD13	0	0	0	1,300 *U*	520 *U*	520 *U*	520 *U*	1,300 *U*	520 *U*
SD14	upland	10/27/1997	SD14	0	0	0	1,600 *U*	620 *U*	620 *U*	620 *U*	1,600 *U*	620 *U*
SD15	upland	10/24/1997	SD15	0	0	0	960 *U*	380 *U*	380 *U*	380 *U*	960 *U*	380 *U*
SD16	upland	10/27/1997	SD16	0	0	0	1,400 *U*	550 *U*	550 *U*	550 *U*	1,400 *UJ*	550 *U*
SD17	upland	10/27/1997	SD17	0	0	0	1,600 *U*	650 *U*	650 *U*	650 *U*	1,600 *UJ*	650 *U*
SD18	upland	10/29/1997	SD18	0	0	0	1,500 *UJ*	600 *UJ*	600 *UJ*	600 *UJ*	1,500 *UJ*	600 *UJ*
SD19	upland	10/24/1997	SD19	0	0	0	1,000 *U*	400 *U*	400 *U*	400 *U*	1,000 *U*	400 *U*
SD20	upland	10/24/1997	SD20	A	0	0	29,000 *UJ*	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	29,000 *UJ*	11,000 *UJ*
SD20	upland	10/24/1997	SD20	B	0	0	28,000 *UJ*	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	28,000 *UJ*	11,000 *UJ*
SD21	Ruplnd	10/24/1997	SD21	0	0	0	930 *U*	370 *U*	370 *U*	370 *U*	930 *U*	370 *U*
SD22	upland	10/24/1997	SD22	0	0	0	1,000 *U*	400 *U*	400 *U*	400 *U*	1,000 *U*	400 *U*
SD23	upland	10/24/1997	SD23	0	0	0	940 *U*	380 *U*	380 *U*	380 *U*	940 *U*	380 *U*
SD24	river	10/27/1997	SD24	0	0	0	2,400 *UJ*	970 *UJ*	970 *UJ*	970 *UJ*	2,400 *UJ*	970 *UJ*
SD25	river	10/29/1997	SD25	0	0	0	2,500 *UJ*	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*	2,500 *UJ*	1,000 *UJ*
SD26	marsh	10/29/1997	SD26	0	0	0	4,900 *UJ*	1,900 *UJ*	1,900 *UJ*	1,900 *UJ*	4,900 *UJ*	1,900 *UJ*
SD27	river	10/30/1997	SD27	0	0	0	3,200 *UJ*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	3,200 *UJ*	1,300 *UJ*
SD28	upland	10/28/1997	SD28	0	0	0	2,400 *UJ*	940 *UJ*	940 *UJ*	940 *UJ*	2,400 *UJ*	940 *UJ*
SD29	upland	10/27/1997	SD29	0	0	0	1,200 *U*	480 *U*	480 *U*	480 *U*	1,200 *UJ*	480 *U*
SD30	upland	10/29/1997	SD30	0	0	0	1,200 *UJ*	480 *UJ*	480 *UJ*	480 *UJ*	1,200 *UJ*	480 *UJ*
SD31	river	10/30/1997	SD31	0	0	0	2,500 *UJ*	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*	2,500 *UJ*	1,000 *UJ*
SD32	upland	10/28/1997	SD32	0	0	0	1,700 *UJ*	700 *UJ*	700 *UJ*	700 *UJ*	1,700 *UJ*	700 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	2,4,5-Trichlorophenol (µg/kg dry)	2,4,6-Trichlorophenol (µg/kg dry)	2,4-Dichlorophenol (µg/kg dry)	2,4-Dimethylphenol (µg/kg dry)	2,4-Dinitrophenol (µg/kg dry)	2,4-Dinitrotoluene (µg/kg dry)
SD33	marsh	10/28/1997	SD33	0	0	0	2,100 *UJ*	850 *UJ*	850 *UJ*	850 *UJ*	2,100 *UJ*	850 *UJ*
SD34	upland	10/30/1997	SD34	0	0	0	1,400 *U*	580 *U*	580 *U*	580 *U*	1,400 *UJ*	580 *U*
SD35	marsh	10/30/1997	SD35	0	0	0	1,900 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*	1,900 *UJ*	750 *UJ*
SD36	marsh	10/30/1997	SD36	0	0	0	1,200 *U*	480 *U*	480 *U*	480 *U*	1,200 *UJ*	480 *U*
SD37	marsh	10/30/1997	SD37	A	0	0	990 *U*	390 *U*	390 *U*	390 *U*	990 *UJ*	390 *U*
SD37	marsh	10/30/1997	SD37	B	0	0	1,000 *U*	400 *U*	400 *U*	400 *U*	1,000 *UJ*	400 *U*
SD38	river	6/24/1998	SD38	0	0	0	2,500 *UJ*	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*	2,500 *UJ*	1,000 *UJ*
SD39	river	6/24/1998	SD39	A	0	0	11,000 *UJ*	4,300 *UJ*	4,300 *UJ*	4,300 *UJ*	11,000 *UJ*	4,300 *UJ*
SD39	river	6/24/1998	SD39	B	0	0	11,000 *UJ*	4,500 *UJ*	4,500 *UJ*	4,500 *UJ*	11,000 *UJ*	4,500 *UJ*
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	1,800 *UJ*	730 *UJ*	730 *UJ*	730 *UJ*	1,800 *UJ*	730 *UJ*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	1,500 *U*	610 *U*	610 *U*	610 *U*	1,500 *U*	610 *U*
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	1,600 *U*	620 *U*	620 *U*	620 *U*	1,600 *U*	620 *U*
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	1,600 *U*	620 *U*	620 *U*	620 *U*	1,600 *U*	620 *U*
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	2,100 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*	2,100 *UJ*	830 *UJ*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	1,500 *U*	580 *U*	580 *U*	580 *U*	1,500 *U*	580 *U*
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	1,400 *U*	550 *U*	550 *U*	550 *U*	1,400 *U*	550 *U*
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	1,600 *U*	650 *U*	650 *U*	650 *U*	1,600 *U*	650 *U*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	2,800 *UJ*	1,100 *UJ*	1,100 *UJ*	1,100 *UJ*	2,800 *UJ*	1,100 *UJ*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	1,600 *U*	620 *U*	620 *U*	620 *U*	1,600 *U*	620 *U*
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	1,600 *U*	630 *U*	630 *U*	630 *U*	1,600 *U*	630 *U*
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	1,400 *U*	570 *U*	570 *U*	570 *U*	1,400 *U*	570 *U*
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	1,900 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*	1,900 *UJ*	750 *UJ*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	1,400 *U*	570 *U*	570 *U*	570 *U*	1,400 *U*	570 *U*
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	1,400 *U*	560 *U*	560 *U*	560 *U*	1,400 *U*	560 *U*
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	1,500 *U*	600 *U*	600 *U*	600 *U*	1,500 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	1,500 *U*	600 *U*	600 *U*	600 *U*	1,500 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	1,500 *U*	580 *U*	580 *U*	580 *U*	1,500 *U*	580 *U*
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	1,500 *U*	600 *U*	600 *U*	600 *U*	1,500 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	1,400 *U*	570 *U*	570 *U*	570 *U*	1,400 *U*	570 *U*
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	1,800 *UJ*	710 *UJ*	710 *UJ*	710 *UJ*	1,800 *UJ*	710 *UJ*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	1,500 *U*	580 *U*	580 *U*	580 *U*	1,500 *U*	580 *U*
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	1,600 *U*	630 *U*	630 *U*	630 *U*	1,600 *U*	630 *U*
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	1,500 *U*	590 *U*	590 *U*	590 *U*	1,500 *UJ*	590 *U*
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	1,300 *U*	510 *U*	510 *U*	510 *U*	1,300 *UJ*	510 *U*
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	1,400 *U*	560 *U*	560 *U*	560 *U*	1,400 *UJ*	560 *U*
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	1,400 *U*	540 *U*	540 *U*	540 *U*	1,400 *UJ*	540 *U*
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	1,300 *U*	520 *U*	520 *U*	520 *U*	1,300 *UJ*	520 *U*
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	4,100 *UJ*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	4,100 *UJ*	1,600 *UJ*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	1,600 *U*	640 *U*	640 *U*	640 *U*	1,600 *UJ*	640 *U*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	2,4,5-Trichlorophenol (µg/kg dry)	2,4,6-Trichlorophenol (µg/kg dry)	2,4-Dichlorophenol (µg/kg dry)	2,4-Dimethylphenol (µg/kg dry)	2,4-Dinitrophenol (µg/kg dry)	2,4-Dinitrotoluene (µg/kg dry)
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	1,500 *U*	610 *U*	610 *U*	610 *U*	1,500 *UJ*	610 *U*
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	2,100 *UJ*	820 *UJ*	820 *UJ*	820 *UJ*	2,100 *UJ*	820 *UJ*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	5,200 *UJ*	2,100 *UJ*	2,100 *UJ*	2,100 *UJ*	5,200 *UJ*	2,100 *UJ*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	1,700 *UJ*	680 *UJ*	680 *UJ*	680 *UJ*	1,700 *UJ*	680 *UJ*
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	1,600 *U*	620 *U*	620 *U*	620 *U*	1,600 *UJ*	620 *U*
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	4,100 *UJ*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	4,100 *UJ*	1,600 *UJ*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	1,800 *UJ*	730 *UJ*	730 *UJ*	730 *UJ*	1,800 *UJ*	730 *UJ*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	1,400 *U*	550 *U*	550 *U*	550 *U*	1,400 *UJ*	550 *U*
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	1,500 *U*	580 *U*	580 *U*	580 *U*	1,500 *U*	580 *U*
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	2,500 *UJ*	980 *UJ*	980 *UJ*	980 *UJ*	2,500 *UJ*	980 *UJ*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	1,000 *U*	410 *U*	410 *U*	410 *U*	1,000 *UJ*	410 *U*
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	1,700 *UJ*	670 *UJ*	670 *UJ*	670 *UJ*	1,700 *UJ*	670 *UJ*
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	1,500 *U*	590 *U*	590 *U*	590 *U*	1,500 *UJ*	590 *U*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	1,400 *U*	560 *U*	560 *U*	560 *U*	1,400 *UJ*	560 *U*
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	1,400 *U*	560 *U*	560 *U*	560 *U*	1,400 *U*	560 *U*
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	1,500 *U*	580 *U*	580 *U*	580 *U*	1,500 *U*	580 *U*
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	1,500 *U*	590 *U*	590 *U*	590 *U*	1,500 *U*	590 *U*
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	1,400 *UJ*	560 *UJ*	560 *UJ*	560 *UJ*	1,400 *UJ*	560 *UJ*

Note: PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	2,6-Dinitrotoluene (µg/kg dry)	2-Chloro-naphthalene (µg/kg dry)	2-Chlorophenol (µg/kg dry)	2-Methyl-4,6-dinitrophenol (µg/kg dry)	2-Methyl-naphthalene (µg/kg dry)	2-Methylphenol (µg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	600 *U*	600 *U*	600 *U*	1,500 *U*	600 *U*	600 *U*
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	660 *U*	660 *U*	660 *U*	1,700 *U*	660 *U*	660 *U*
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	620 *U*	620 *U*	620 *U*	1,600 *U*	620 *U*	620 *U*
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	670 *UJ*	670 *UJ*	670 *UJ*	1,700 *UJ*	670 *UJ*	670 *UJ*
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	420 *U*	420 *U*	420 *U*	1,100 *U*	420 *U*	420 *U*
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	500 *U*	500 *U*	500 *U*	1,200 *U*	500 *U*	500 *U*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	440 *U*	440 *U*	440 *U*	1,100 *U*	440 *U*	440 *U*
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	530 *U*	530 *U*	530 *U*	1,300 *U*	530 *U*	530 *U*
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	740 *UJ*	740 *UJ*	740 *UJ*	1,900 *UJ*	740 *UJ*	740 *UJ*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	750 *UJ*	750 *UJ*	750 *UJ*	1,900 *UJ*	140 *J*	750 *UJ*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	700 *UJ*	700 *UJ*	700 *UJ*	1,800 *UJ*	330 *J*	700 *UJ*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	800 *UJ*	800 *UJ*	800 *UJ*	2,000 *UJ*	180 *J*	800 *UJ*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	780 *UJ*	780 *UJ*	780 *UJ*	2,000 *UJ*	780 *UJ*	780 *UJ*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	760 *UJ*	760 *UJ*	760 *UJ*	1,900 *UJ*	110 *J*	760 *UJ*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	720 *UJ*	720 *UJ*	720 *UJ*	1,800 *UJ*	150 *J*	720 *UJ*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	780 *UJ*	780 *UJ*	780 *UJ*	2,000 *UJ*	780 *UJ*	780 *UJ*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	590 *U*	590 *U*	590 *U*	1,500 *U*	61 *J*	590 *U*
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	700 *UJ*	700 *UJ*	700 *UJ*	1,800 *UJ*	140 *J*	700 *UJ*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	640 *UJ*	640 *UJ*	640 *UJ*	1,600 *UJ*	83 *J*	640 *UJ*
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	700 *UJ*	700 *UJ*	700 *UJ*	1,700 *UJ*	190 *J*	700 *UJ*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	870 *UJ*	870 *UJ*	870 *UJ*	2,200 *UJ*	870 *UJ*	870 *UJ*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	790 *UJ*	790 *UJ*	790 *UJ*	2,000 *UJ*	790 *UJ*	790 *UJ*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	720 *UJ*	720 *UJ*	720 *UJ*	1,800 *UJ*	130 *J*	720 *UJ*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	970 *UJ*	970 *UJ*	970 *UJ*	2,400 *UJ*	120 *J*	970 *UJ*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	3,000 *UJ*	1,200 *UJ*	1,200 *UJ*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	700 *UJ*	700 *UJ*	2,300 *J*	1,800 *UJ*	700 *UJ*	700 *UJ*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	670 *UJ*	670 *UJ*	670 *UJ*	1,700 *UJ*	670 *UJ*	670 *UJ*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	780 *UJ*	780 *UJ*	780 *UJ*	2,000 *UJ*	780 *UJ*	780 *UJ*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	3,200 *UJ*	1,300 *UJ*	1,300 *UJ*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	700 *UJ*	700 *UJ*	700 *UJ*	1,700 *UJ*	700 *UJ*	700 *UJ*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	680 *UJ*	680 *UJ*	680 *UJ*	1,700 *UJ*	92 *J*	680 *UJ*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	790 *UJ*	790 *UJ*	790 *UJ*	2,000 *UJ*	790 *UJ*	790 *UJ*
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6	830 *UJ*	830 *UJ*	830 *UJ*	2,100 *UJ*	830 *UJ*	830 *UJ*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	770 *UJ*	770 *UJ*	770 *UJ*	1,900 *UJ*	770 *UJ*	770 *UJ*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	780 *UJ*	780 *UJ*	780 *UJ*	2,000 *UJ*	780 *UJ*	780 *UJ*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	830 *UJ*	830 *UJ*	830 *UJ*	2,100 *UJ*	830 *UJ*	830 *UJ*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	860 *UJ*	860 *UJ*	860 *UJ*	2,200 *UJ*	860 *UJ*	860 *UJ*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	720 *UJ*	720 *UJ*	720 *UJ*	1,800 *UJ*	720 *UJ*	720 *UJ*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	670 *UJ*	670 *UJ*	670 *UJ*	1,700 *UJ*	670 *UJ*	670 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	2,6-Dinitrotoluene (µg/kg dry)	2-Chloro-naphthalene (µg/kg dry)	2-Chlorophenol (µg/kg dry)	2-Methyl-4,6-dinitrophenol (µg/kg dry)	2-Methyl-naphthalene (µg/kg dry)	2-Methylphenol (µg/kg dry)
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	830 *UJ*	770 *UJ*	1,900 *UJ*	830 *UJ*	770 *UJ*	1,900 *UJ*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	920 *UJ*	920 *UJ*	920 *UJ*	2,300 *UJ*	920 *UJ*	920 *UJ*
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	590 *U*	590 *U*	590 *U*	1,500 *U*	590 *U*	590 *U*
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	650 *U*	650 *U*	650 *U*	1,600 *U*	650 *U*	650 *U*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	750 *UJ*	750 *UJ*	750 *UJ*	1,900 *UJ*	93 *J*	670 *J*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	800 *UJ*	800 *UJ*	800 *UJ*	2,000 *UJ*	800 *UJ*	800 *UJ*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	590 *U*	590 *U*	590 *U*	1,500 *U*	590 *U*	590 *U*
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	600 *U*	600 *U*	600 *U*	1,500 *U*	600 *U*	600 *U*
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	650 *U*	650 *U*	650 *U*	1,600 *U*	650 *U*	650 *U*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	660 *U*	660 *U*	660 *U*	1,700 *U*	660 *U*	660 *U*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	580 *U*	580 *U*	580 *U*	1,400 *U*	580 *U*	580 *U*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	590 *U*	590 *U*	590 *U*	1,500 *U*	590 *U*	590 *U*
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	670 *UJ*	670 *UJ*	670 *UJ*	1,700 *UJ*	670 *UJ*	670 *UJ*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	830 *UJ*	830 *UJ*	830 *UJ*	2,100 *UJ*	830 *UJ*	830 *UJ*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	610 *U*	610 *U*	610 *U*	1,500 *U*	610 *U*	610 *U*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	600 *U*	600 *U*	600 *U*	1,500 *U*	600 *U*	600 *U*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	700 *UJ*	700 *UJ*	700 *UJ*	1,800 *UJ*	700 *UJ*	700 *UJ*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	870 *UJ*	870 *UJ*	870 *UJ*	2,200 *UJ*	870 *UJ*	870 *UJ*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	750 *UJ*	750 *UJ*	750 *UJ*	1,900 *UJ*	750 *UJ*	750 *UJ*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	820 *UJ*	820 *UJ*	820 *UJ*	2,100 *UJ*	820 *UJ*	820 *UJ*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	820 *UJ*	820 *UJ*	820 *UJ*	2,100 *UJ*	820 *UJ*	820 *UJ*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	970 *UJ*	970 *UJ*	970 *UJ*	2,400 *UJ*	970 *UJ*	970 *UJ*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	500 *U*	500 *U*	500 *U*	1,300 *U*	500 *U*	500 *U*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	550 *U*	550 *U*	550 *U*	1,400 *U*	550 *U*	550 *U*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	720 *UJ*	720 *UJ*	720 *UJ*	1,800 *UJ*	720 *UJ*	720 *UJ*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	920 *UJ*	920 *UJ*	920 *UJ*	2,300 *UJ*	920 *UJ*	920 *UJ*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	450 *U*	450 *U*	450 *U*	1,100 *U*	450 *U*	450 *U*
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	450 *U*	450 *U*	450 *U*	1,100 *U*	450 *U*	450 *U*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	720 *UJ*	720 *UJ*	720 *UJ*	1,800 *UJ*	720 *UJ*	720 *UJ*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	560 *U*	560 *U*	560 *U*	1,400 *U*	560 *U*	560 *U*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	610 *U*	610 *U*	610 *U*	1,500 *U*	610 *U*	610 *U*
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	620 *U*	620 *U*	620 *U*	1,600 *U*	620 *U*	620 *U*
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	590 *U*	590 *U*	590 *U*	1,500 *U*	590 *U*	590 *U*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	550 *U*	550 *U*	550 *U*	1,400 *U*	550 *U*	550 *U*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	570 *U*	570 *U*	570 *U*	1,400 *U*	570 *U*	570 *U*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	590 *U*	590 *U*	590 *U*	1,500 *U*	590 *U*	590 *U*
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	610 *U*	610 *U*	610 *U*	1,500 *U*	610 *U*	610 *U*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	890 *UJ*	890 *UJ*	890 *UJ*	2,200 *UJ*	890 *UJ*	890 *UJ*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	800 *UJ*	800 *UJ*	800 *UJ*	2,000 *UJ*	800 *UJ*	800 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	2,6-Dinitrotoluene (µg/kg dry)	2-Chloro-naphthalene (µg/kg dry)	2-Chlorophenol (µg/kg dry)	2-Methyl-4,6-dinitrophenol (µg/kg dry)	2-Methyl-naphthalene (µg/kg dry)	2-Methylphenol (µg/kg dry)
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	2,300 *UJ*	2,300 *UJ*	2,300 *UJ*	5,700 *UJ*	2,300 *UJ*	2,300 *UJ*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	750 *UJ*	750 *UJ*	750 *UJ*	1,900 *UJ*	750 *UJ*	750 *UJ*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	890 *UJ*	890 *UJ*	890 *UJ*	2,200 *UJ*	890 *UJ*	890 *UJ*
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	800 *UJ*	800 *UJ*	800 *UJ*	2,000 *UJ*	800 *UJ*	800 *UJ*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	750 *UJ*	750 *UJ*	750 *UJ*	1,900 *UJ*	750 *UJ*	750 *UJ*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	730 *UJ*	730 *UJ*	730 *UJ*	1,800 *UJ*	730 *UJ*	730 *UJ*
SD01	Ruplnd	10/23/1997	SD01	0	0	0	520 *U*	520 *U*	520 *U*	1,300 *U*	520 *U*	520 *U*
SD02	Ruplnd	10/24/1997	SD02	0	0	0	470 *U*	470 *U*	470 *U*	1,200 *U*	470 *U*	470 *U*
SD03	upland	10/23/1997	SD03	0	0	0	580 *U*	580 *U*	580 *U*	1,400 *U*	580 *U*	580 *U*
SD04	upland	10/24/1997	SD04	0	0	0	600 *U*	600 *U*	600 *U*	1,500 *U*	600 *U*	600 *U*
SD05	upland	10/23/1997	SD05	0	0	0	1,000 *U*	1,000 *U*	1,000 *U*	2,500 *U*	1,000 *U*	1,000 *U*
SD06	upland	10/23/1997	SD06	0	0	0	1,700 *UJ*	1,700 *UJ*	1,700 *UJ*	4,400 *UJ*	1,700 *UJ*	1,700 *UJ*
SD07	upland	10/23/1997	SD07	0	0	0	5,000 *UJ*	5,000 *UJ*	5,000 *UJ*	12,000 *UJ*	880 *J*	5,000 *UJ*
SD08	upland	10/23/1997	SD08	0	0	0	7,700 *U*	7,700 *U*	7,700 *U*	19,000 *U*	20,000	7,700 *U*
SD09	upland	10/28/1997	SD09	0	0	0	820 *UJ*	820 *UJ*	820 *UJ*	2,100 *UJ*	820 *UJ*	820 *UJ*
SD10	upland	10/28/1997	SD10	0	0	0	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	3,200 *UJ*	1,300 *UJ*	1,300 *UJ*
SD11	upland	10/28/1997	SD11	0	0	0	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	4,000 *UJ*	1,600 *UJ*	1,600 *UJ*
SD12	upland	10/28/1997	SD12	0	0	0	1,100 *UJ*	1,100 *UJ*	1,100 *UJ*	2,700 *UJ*	1,100 *UJ*	1,100 *UJ*
SD13	upland	10/27/1997	SD13	0	0	0	520 *U*	520 *U*	520 *U*	1,300 *U*	520 *U*	520 *U*
SD14	upland	10/27/1997	SD14	0	0	0	620 *U*	620 *U*	620 *U*	1,600 *U*	620 *U*	620 *U*
SD15	upland	10/24/1997	SD15	0	0	0	380 *U*	380 *U*	380 *U*	960 *U*	380 *U*	380 *U*
SD16	upland	10/27/1997	SD16	0	0	0	550 *U*	550 *U*	550 *U*	1,400 *UJ*	550 *U*	550 *U*
SD17	upland	10/27/1997	SD17	0	0	0	650 *U*	650 *U*	650 *U*	1,600 *UJ*	650 *U*	650 *U*
SD18	upland	10/29/1997	SD18	0	0	0	600 *UJ*	600 *UJ*	600 *UJ*	1,500 *UJ*	600 *UJ*	600 *UJ*
SD19	upland	10/24/1997	SD19	0	0	0	400 *U*	400 *U*	400 *U*	1,000 *U*	400 *U*	400 *U*
SD20	upland	10/24/1997	SD20	A	0	0	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	29,000 *UJ*	11,000 *UJ*	11,000 *UJ*
SD20	upland	10/24/1997	SD20	B	0	0	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	28,000 *UJ*	11,000 *UJ*	11,000 *UJ*
SD21	Ruplnd	10/24/1997	SD21	0	0	0	370 *U*	370 *U*	370 *U*	930 *U*	370 *U*	370 *U*
SD22	upland	10/24/1997	SD22	0	0	0	400 *U*	400 *U*	400 *U*	1,000 *U*	82 *J*	400 *U*
SD23	upland	10/24/1997	SD23	0	0	0	380 *U*	380 *U*	380 *U*	940 *U*	380 *U*	380 *U*
SD24	river	10/27/1997	SD24	0	0	0	970 *UJ*	970 *UJ*	970 *UJ*	2,400 *UJ*	970 *UJ*	970 *UJ*
SD25	river	10/29/1997	SD25	0	0	0	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*	2,500 *UJ*	1,000 *UJ*	1,000 *UJ*
SD26	marsh	10/29/1997	SD26	0	0	0	1,900 *UJ*	1,900 *UJ*	1,900 *UJ*	4,900 *UJ*	1,900 *UJ*	1,900 *UJ*
SD27	river	10/30/1997	SD27	0	0	0	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	3,200 *UJ*	1,300 *UJ*	1,300 *UJ*
SD28	upland	10/28/1997	SD28	0	0	0	940 *UJ*	940 *UJ*	940 *UJ*	2,400 *UJ*	940 *UJ*	940 *UJ*
SD29	upland	10/27/1997	SD29	0	0	0	480 *U*	480 *U*	480 *U*	1,200 *UJ*	480 *U*	480 *U*
SD30	upland	10/29/1997	SD30	0	0	0	480 *UJ*	480 *UJ*	480 *UJ*	1,200 *UJ*	480 *UJ*	480 *UJ*
SD31	river	10/30/1997	SD31	0	0	0	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*	2,500 *UJ*	1,000 *UJ*	1,000 *UJ*
SD32	upland	10/28/1997	SD32	0	0	0	700 *UJ*	700 *UJ*	700 *UJ*	1,700 *UJ*	700 *UJ*	700 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	2,6-Dinitrotoluene (µg/kg dry)	2-Chloro-naphthalene (µg/kg dry)	2-Chlorophenol (µg/kg dry)	2-Methyl-4,6-dinitrophenol (µg/kg dry)	2-Methyl-naphthalene (µg/kg dry)	2-Methylphenol (µg/kg dry)
SD33	marsh	10/28/1997	SD33	0	0	0	850 *UJ*	850 *UJ*	850 *UJ*	2,100 *UJ*	850 *UJ*	850 *UJ*
SD34	upland	10/30/1997	SD34	0	0	0	580 *U*	580 *U*	580 *U*	1,400 *UJ*	580 *U*	580 *U*
SD35	marsh	10/30/1997	SD35	0	0	0	750 *UJ*	750 *UJ*	750 *UJ*	1,900 *UJ*	750 *UJ*	750 *UJ*
SD36	marsh	10/30/1997	SD36	0	0	0	480 *U*	480 *U*	480 *U*	1,200 *UJ*	480 *U*	480 *U*
SD37	marsh	10/30/1997	SD37	A	0	0	390 *U*	390 *U*	390 *U*	990 *UJ*	390 *U*	390 *U*
SD37	marsh	10/30/1997	SD37	B	0	0	400 *U*	400 *U*	400 *U*	1,000 *U*	400 *U*	400 *U*
SD38	river	6/24/1998	SD38	0	0	0	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*	2,500 *UJ*	1,000 *UJ*	1,000 *UJ*
SD39	river	6/24/1998	SD39	A	0	0	4,300 *UJ*	4,300 *UJ*	4,300 *UJ*	11,000 *UJ*	4,300 *UJ*	4,300 *UJ*
SD39	river	6/24/1998	SD39	B	0	0	4,500 *UJ*	4,500 *UJ*	4,500 *UJ*	11,000 *UJ*	4,500 *UJ*	4,500 *UJ*
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	730 *UJ*	730 *UJ*	730 *UJ*	1,800 *UJ*	420 *J*	730 *UJ*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	610 *U*	610 *U*	610 *U*	1,500 *U*	610 *U*	610 *U*
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	620 *U*	620 *U*	620 *U*	1,600 *U*	620 *U*	620 *U*
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	620 *U*	620 *U*	620 *U*	1,600 *U*	620 *U*	620 *U*
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	830 *UJ*	830 *UJ*	830 *UJ*	2,100 *UJ*	830 *UJ*	830 *UJ*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	580 *U*	580 *U*	580 *U*	1,500 *U*	580 *U*	580 *U*
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	550 *U*	550 *U*	550 *U*	1,400 *U*	550 *U*	550 *U*
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	650 *U*	650 *U*	650 *U*	1,600 *U*	650 *U*	650 *U*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	1,100 *UJ*	1,100 *UJ*	1,100 *UJ*	2,800 *UJ*	1,100 *UJ*	1,100 *UJ*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	620 *U*	620 *U*	620 *U*	1,600 *U*	620 *U*	620 *U*
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	630 *U*	630 *U*	630 *U*	1,600 *U*	630 *U*	630 *U*
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	570 *U*	570 *U*	570 *U*	1,400 *U*	570 *U*	570 *U*
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	750 *UJ*	750 *UJ*	750 *UJ*	1,900 *UJ*	750 *UJ*	750 *UJ*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	570 *U*	570 *U*	570 *U*	1,400 *U*	570 *U*	570 *U*
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	560 *U*	560 *U*	560 *U*	1,400 *U*	560 *U*	560 *U*
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	600 *U*	600 *U*	600 *U*	1,500 *U*	600 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	600 *U*	600 *U*	600 *U*	1,500 *U*	600 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	580 *U*	580 *U*	580 *U*	1,500 *U*	580 *U*	580 *U*
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	600 *U*	600 *U*	600 *U*	1,500 *U*	600 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	570 *U*	570 *U*	570 *U*	1,400 *U*	570 *U*	570 *U*
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	710 *UJ*	710 *UJ*	710 *UJ*	1,800 *UJ*	710 *UJ*	710 *UJ*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	580 *U*	580 *U*	580 *U*	1,500 *U*	580 *U*	580 *U*
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	630 *U*	630 *U*	630 *U*	1,600 *U*	630 *U*	630 *U*
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	590 *U*	590 *U*	590 *U*	1,500 *U*	590 *U*	590 *U*
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	510 *U*	510 *U*	510 *U*	1,300 *U*	510 *U*	510 *U*
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	560 *U*	560 *U*	560 *U*	1,400 *U*	560 *U*	560 *U*
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	540 *U*	540 *U*	540 *U*	1,400 *U*	540 *U*	540 *U*
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	520 *U*	520 *U*	520 *U*	1,300 *U*	520 *U*	520 *U*
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	4,100 *UJ*	1,600 *UJ*	1,600 *UJ*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	640 *U*	640 *U*	640 *U*	1,600 *U*	640 *U*	640 *U*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	2,6-Dinitrotoluene (µg/kg dry)	2-Chloro-naphthalene (µg/kg dry)	2-Chlorophenol (µg/kg dry)	2-Methyl-4,6-dinitrophenol (µg/kg dry)	2-Methyl-naphthalene (µg/kg dry)	2-Methylphenol (µg/kg dry)
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	610 *U*	610 *U*	610 *U*	1,500 *U*	610 *U*	610 *U*
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	820 *UJ*	820 *UJ*	820 *UJ*	2,100 *UJ*	820 *UJ*	820 *UJ*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	2,100 *UJ*	2,100 *UJ*	2,100 *UJ*	5,200 *UJ*	2,100 *UJ*	2,100 *UJ*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	680 *UJ*	680 *UJ*	680 *UJ*	1,700 *UJ*	680 *UJ*	680 *UJ*
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	620 *U*	620 *U*	620 *U*	1,600 *U*	620 *U*	620 *U*
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	4,100 *UJ*	1,600 *UJ*	1,600 *UJ*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	730 *UJ*	730 *UJ*	730 *UJ*	1,800 *UJ*	730 *UJ*	730 *UJ*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	550 *U*	550 *U*	550 *U*	1,400 *U*	550 *U*	550 *U*
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	580 *U*	580 *U*	580 *U*	1,500 *U*	580 *U*	580 *U*
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	980 *UJ*	980 *UJ*	980 *UJ*	2,500 *UJ*	980 *UJ*	980 *UJ*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	410 *U*	410 *U*	410 *U*	1,000 *U*	410 *U*	410 *U*
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	670 *UJ*	670 *UJ*	670 *UJ*	1,700 *UJ*	670 *UJ*	670 *UJ*
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	590 *U*	590 *U*	590 *U*	1,500 *U*	590 *U*	590 *U*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	560 *U*	560 *U*	560 *U*	1,400 *U*	130 *J*	560 *U*
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	560 *U*	560 *U*	560 *U*	1,400 *U*	560 *U*	560 *U*
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	580 *U*	580 *U*	580 *U*	1,500 *U*	580 *U*	580 *U*
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	590 *U*	590 *U*	590 *U*	1,500 *U*	590 *U*	590 *U*
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	560 *UJ*	560 *UJ*	560 *UJ*	1,400 *UJ*	560 *UJ*	560 *UJ*

Note: PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	2-Nitroaniline (µg/kg dry)	2-Nitrophenol (µg/kg dry)	3,3'-Dichloro-benzidine (µg/kg dry)	3-Nitroaniline (µg/kg dry)	4-Bromophenyl-phenyl ether (µg/kg dry)	4-Chloro-3-methylphenol (µg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	1,500 *U*	600 *U*	600 *UJ*	1,500 *U*	600 *U*	600 *U*
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	1,700 *U*	660 *U*	660 *UJ*	1,700 *U*	660 *U*	660 *U*
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	1,600 *U*	620 *U*	620 *U*	1,600 *U*	620 *U*	620 *U*
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	1,700 *UJ*	670 *UJ*	670 *UJ*	1,700 *UJ*	670 *UJ*	670 *UJ*
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	1,100 *U*	420 *U*	420 *U*	1,100 *U*	420 *U*	420 *U*
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	1,200 *U*	500 *U*	500 *U*	1,200 *U*	500 *U*	500 *U*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	1,100 *U*	440 *U*	440 *U*	1,100 *U*	440 *U*	440 *U*
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	1,300 *U*	530 *U*	530 *U*	1,300 *U*	530 *U*	530 *U*
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	1,900 *UJ*	740 *UJ*	740 *UJ*	1,900 *UJ*	740 *UJ*	740 *UJ*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	1,900 *UJ*	750 *UJ*	750 *UJ*	1,900 *UJ*	750 *UJ*	750 *UJ*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	1,800 *UJ*	700 *UJ*	700 *UJ*	1,800 *UJ*	700 *UJ*	700 *UJ*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	2,000 *UJ*	800 *UJ*	800 *UJ*	2,000 *UJ*	800 *UJ*	800 *UJ*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	2,000 *UJ*	780 *UJ*	780 *UJ*	2,000 *UJ*	780 *UJ*	780 *UJ*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	1,900 *UJ*	760 *UJ*	760 *UJ*	1,900 *UJ*	760 *UJ*	760 *UJ*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	1,800 *UJ*	720 *UJ*	720 *UJ*	1,800 *UJ*	720 *UJ*	720 *UJ*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	2,000 *UJ*	780 *UJ*	780 *UJ*	2,000 *UJ*	780 *UJ*	780 *UJ*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	1,500 *U*	590 *U*	590 *UJ*	1,500 *U*	590 *U*	590 *U*
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	1,800 *UJ*	700 *UJ*	700 *UJ*	1,800 *UJ*	700 *UJ*	700 *UJ*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	1,600 *UJ*	640 *UJ*	640 *UJ*	1,600 *UJ*	640 *UJ*	640 *UJ*
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	1,700 *UJ*	700 *UJ*	700 *UJ*	1,700 *UJ*	700 *UJ*	700 *UJ*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	2,200 *UJ*	870 *UJ*	870 *UJ*	2,200 *UJ*	870 *UJ*	870 *UJ*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	2,000 *UJ*	790 *UJ*	790 *UJ*	2,000 *UJ*	790 *UJ*	790 *UJ*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	1,800 *UJ*	720 *UJ*	720 *R*	1,800 *UJ*	720 *UJ*	720 *UJ*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	2,400 *UJ*	970 *UJ*	970 *UJ*	2,400 *UJ*	970 *UJ*	970 *UJ*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	3,000 *UJ*	1,200 *UJ*	1,200 *UJ*	3,000 *UJ*	1,200 *UJ*	1,200 *UJ*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	1,800 *UJ*	700 *UJ*	700 *UJ*	1,800 *UJ*	700 *UJ*	2,500 *J*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	1,700 *UJ*	670 *UJ*	670 *UJ*	1,700 *UJ*	670 *UJ*	670 *UJ*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	2,000 *UJ*	780 *UJ*	780 *UJ*	2,000 *UJ*	780 *UJ*	780 *UJ*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	3,200 *UJ*	1,300 *UJ*	1,300 *UJ*	3,200 *UJ*	1,300 *UJ*	1,300 *UJ*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	1,700 *UJ*	700 *UJ*	700 *UJ*	1,700 *UJ*	700 *UJ*	700 *UJ*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	1,700 *UJ*	680 *UJ*	680 *UJ*	1,700 *UJ*	680 *UJ*	680 *UJ*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	2,000 *UJ*	790 *UJ*	790 *UJ*	2,000 *UJ*	790 *UJ*	790 *UJ*
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6	2,100 *UJ*	830 *UJ*	830 *UJ*	2,100 *UJ*	830 *UJ*	830 *UJ*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	1,900 *UJ*	770 *UJ*	770 *UJ*	1,900 *UJ*	770 *UJ*	770 *UJ*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	2,000 *UJ*	780 *UJ*	780 *UJ*	2,000 *UJ*	780 *UJ*	780 *UJ*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	2,100 *UJ*	830 *UJ*	830 *UJ*	2,100 *UJ*	830 *UJ*	830 *UJ*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	2,200 *UJ*	860 *UJ*	860 *UJ*	2,200 *UJ*	860 *UJ*	860 *UJ*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	1,800 *UJ*	720 *UJ*	720 *UJ*	1,800 *UJ*	720 *UJ*	720 *UJ*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	1,700 *UJ*	670 *UJ*	670 *UJ*	1,700 *UJ*	670 *UJ*	670 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	2-Nitroaniline (µg/kg dry)	2-Nitrophenol (µg/kg dry)	3,3'-Dichloro-benzidine (µg/kg dry)	3-Nitroaniline (µg/kg dry)	4-Bromophenyl-phenyl ether (µg/kg dry)	4-Chloro-3-methylphenol (µg/kg dry)
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	100 *J*	770 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*	770 *UJ*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	2,300 *UJ*	920 *UJ*	920 *UJ*	2,300 *UJ*	920 *UJ*	920 *UJ*
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	1,500 *U*	590 *U*	590 *U*	1,500 *U*	590 *U*	590 *U*
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	1,600 *U*	650 *U*	650 *U*	1,600 *U*	650 *U*	650 *U*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	1,900 *UJ*	750 *UJ*	750 *UJ*	1,900 *UJ*	750 *UJ*	750 *UJ*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	2,000 *UJ*	800 *UJ*	800 *UJ*	2,000 *UJ*	800 *UJ*	800 *UJ*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	1,500 *U*	590 *U*	590 *U*	1,500 *U*	590 *U*	590 *U*
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	1,500 *U*	600 *U*	600 *U*	1,500 *U*	600 *U*	600 *U*
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	1,600 *U*	650 *U*	650 *UJ*	1,600 *U*	650 *U*	650 *U*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	1,700 *U*	660 *U*	660 *U*	1,700 *U*	660 *U*	660 *U*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	1,400 *U*	580 *U*	580 *U*	1,400 *U*	580 *U*	580 *U*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	1,500 *U*	590 *U*	590 *U*	1,500 *U*	590 *U*	590 *U*
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	1,700 *UJ*	670 *UJ*	670 *UJ*	1,700 *UJ*	670 *UJ*	670 *UJ*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	2,100 *UJ*	830 *UJ*	830 *UJ*	2,100 *UJ*	830 *UJ*	830 *UJ*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	1,500 *U*	610 *U*	610 *UJ*	1,500 *UJ*	610 *U*	610 *U*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	1,500 *U*	600 *U*	600 *U*	1,500 *U*	600 *U*	600 *U*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	1,800 *UJ*	700 *UJ*	700 *UJ*	1,800 *UJ*	700 *UJ*	700 *UJ*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	2,200 *UJ*	870 *UJ*	870 *UJ*	2,200 *UJ*	870 *UJ*	870 *UJ*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	1,900 *UJ*	750 *UJ*	750 *UJ*	1,900 *UJ*	750 *UJ*	750 *UJ*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	2,100 *UJ*	820 *UJ*	820 *UJ*	2,100 *UJ*	820 *UJ*	820 *UJ*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	2,100 *UJ*	820 *UJ*	820 *UJ*	2,100 *UJ*	820 *UJ*	820 *UJ*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	2,400 *UJ*	970 *UJ*	970 *UJ*	2,400 *UJ*	970 *UJ*	970 *UJ*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	1,300 *U*	500 *U*	500 *UJ*	1,300 *UJ*	500 *U*	500 *U*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	1,400 *U*	550 *U*	550 *UJ*	1,400 *UJ*	550 *U*	550 *U*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	1,800 *UJ*	720 *UJ*	720 *UJ*	1,800 *UJ*	720 *UJ*	720 *UJ*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	2,300 *UJ*	920 *UJ*	920 *UJ*	2,300 *UJ*	920 *UJ*	920 *UJ*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	1,100 *U*	450 *U*	450 *UJ*	1,100 *UJ*	450 *U*	450 *U*
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	1,100 *U*	450 *U*	450 *UJ*	1,100 *UJ*	450 *U*	450 *U*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	1,800 *UJ*	720 *UJ*	720 *UJ*	1,800 *UJ*	720 *UJ*	720 *UJ*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	1,400 *U*	560 *U*	560 *U*	1,400 *U*	560 *U*	560 *U*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	1,500 *U*	610 *U*	610 *U*	1,500 *U*	610 *U*	610 *U*
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	1,600 *U*	620 *U*	620 *U*	1,600 *U*	620 *U*	620 *U*
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	1,500 *U*	590 *U*	590 *U*	1,500 *U*	590 *U*	590 *U*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	1,400 *U*	550 *U*	550 *U*	1,400 *U*	550 *U*	550 *U*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	1,400 *U*	570 *U*	570 *U*	1,400 *U*	570 *U*	570 *U*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	1,500 *U*	590 *U*	590 *U*	1,500 *U*	590 *U*	590 *U*
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	1,500 *U*	610 *U*	610 *U*	1,500 *U*	610 *U*	610 *U*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	2,200 *UJ*	890 *UJ*	890 *UJ*	2,200 *UJ*	890 *UJ*	890 *UJ*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	2,000 *UJ*	800 *UJ*	800 *UJ*	2,000 *UJ*	800 *UJ*	800 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	2-Nitroaniline (µg/kg dry)	2-Nitrophenol (µg/kg dry)	3,3'-Dichloro-benzidine (µg/kg dry)	3-Nitroaniline (µg/kg dry)	4-Bromophenyl-phenyl ether (µg/kg dry)	4-Chloro-3-methylphenol (µg/kg dry)
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	5,700 *UJ*	2,300 *UJ*	2,300 *UJ*	5,700 *UJ*	2,300 *UJ*	2,300 *UJ*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	1,900 *UJ*	750 *UJ*	750 *UJ*	1,900 *UJ*	750 *UJ*	750 *UJ*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	2,200 *UJ*	890 *UJ*	890 *UJ*	2,200 *UJ*	890 *UJ*	890 *UJ*
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	2,000 *UJ*	800 *UJ*	800 *UJ*	2,000 *UJ*	800 *UJ*	800 *UJ*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	1,900 *UJ*	750 *UJ*	750 *UJ*	1,900 *UJ*	750 *UJ*	750 *UJ*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	1,800 *UJ*	730 *UJ*	730 *UJ*	1,800 *UJ*	730 *UJ*	730 *UJ*
SD01	Ruplnd	10/23/1997	SD01	0	0	0	1,300 *U*	520 *U*	520 *U*	1,300 *U*	520 *U*	520 *U*
SD02	Ruplnd	10/24/1997	SD02	0	0	0	1,200 *U*	470 *U*	470 *UJ*	1,200 *UJ*	470 *U*	470 *U*
SD03	upland	10/23/1997	SD03	0	0	0	1,400 *U*	580 *U*	580 *U*	1,400 *U*	580 *U*	580 *U*
SD04	upland	10/24/1997	SD04	0	0	0	1,500 *U*	600 *U*	600 *UJ*	1,500 *UJ*	600 *U*	600 *U*
SD05	upland	10/23/1997	SD05	0	0	0	2,500 *U*	1,000 *U*	1,000 *UJ*	2,500 *UJ*	1,000 *U*	1,000 *U*
SD06	upland	10/23/1997	SD06	0	0	0	4,400 *UJ*	1,700 *UJ*	1,700 *UJ*	4,400 *UJ*	1,700 *UJ*	1,700 *UJ*
SD07	upland	10/23/1997	SD07	0	0	0	12,000 *UJ*	5,000 *UJ*	5,000 *UJ*	12,000 *UJ*	5,000 *UJ*	5,000 *UJ*
SD08	upland	10/23/1997	SD08	0	0	0	19,000 *U*	7,700 *U*	7,700 *U*	19,000 *U*	7,700 *U*	7,700 *U*
SD09	upland	10/28/1997	SD09	0	0	0	2,100 *UJ*	820 *UJ*	820 *UJ*	2,100 *UJ*	820 *UJ*	820 *UJ*
SD10	upland	10/28/1997	SD10	0	0	0	3,200 *UJ*	1,300 *UJ*	1,300 *UJ*	3,200 *UJ*	1,300 *UJ*	1,300 *UJ*
SD11	upland	10/28/1997	SD11	0	0	0	4,000 *UJ*	1,600 *UJ*	1,600 *UJ*	4,000 *UJ*	1,600 *UJ*	1,600 *UJ*
SD12	upland	10/28/1997	SD12	0	0	0	2,700 *UJ*	1,100 *UJ*	1,100 *UJ*	2,700 *UJ*	1,100 *UJ*	1,100 *UJ*
SD13	upland	10/27/1997	SD13	0	0	0	1,300 *U*	520 *U*	520 *U*	1,300 *U*	520 *U*	520 *U*
SD14	upland	10/27/1997	SD14	0	0	0	1,600 *U*	620 *U*	620 *U*	1,600 *U*	620 *U*	620 *U*
SD15	upland	10/24/1997	SD15	0	0	0	960 *U*	380 *U*	380 *U*	960 *U*	380 *U*	380 *U*
SD16	upland	10/27/1997	SD16	0	0	0	1,400 *U*	550 *U*	550 *U*	1,400 *U*	550 *U*	550 *U*
SD17	upland	10/27/1997	SD17	0	0	0	1,600 *U*	650 *U*	650 *U*	1,600 *U*	650 *U*	650 *U*
SD18	upland	10/29/1997	SD18	0	0	0	1,500 *UJ*	600 *UJ*	600 *UJ*	1,500 *UJ*	600 *UJ*	600 *UJ*
SD19	upland	10/24/1997	SD19	0	0	0	1,000 *U*	400 *U*	400 *U*	1,000 *U*	400 *U*	400 *U*
SD20	upland	10/24/1997	SD20	A	0	0	29,000 *UJ*	11,000 *UJ*	11,000 *UJ*	29,000 *UJ*	11,000 *UJ*	11,000 *UJ*
SD20	upland	10/24/1997	SD20	B	0	0	28,000 *UJ*	11,000 *UJ*	11,000 *UJ*	28,000 *UJ*	11,000 *UJ*	11,000 *UJ*
SD21	Ruplnd	10/24/1997	SD21	0	0	0	930 *U*	370 *U*	370 *U*	930 *U*	370 *U*	370 *U*
SD22	upland	10/24/1997	SD22	0	0	0	1,000 *U*	400 *U*	400 *U*	1,000 *U*	400 *U*	400 *U*
SD23	upland	10/24/1997	SD23	0	0	0	940 *U*	380 *U*	380 *U*	940 *U*	380 *U*	380 *U*
SD24	river	10/27/1997	SD24	0	0	0	2,400 *UJ*	970 *UJ*	970 *UJ*	2,400 *UJ*	970 *UJ*	970 *UJ*
SD25	river	10/29/1997	SD25	0	0	0	2,500 *UJ*	1,000 *UJ*	1,000 *UJ*	2,500 *UJ*	1,000 *UJ*	1,000 *UJ*
SD26	marsh	10/29/1997	SD26	0	0	0	4,900 *UJ*	1,900 *UJ*	1,900 *UJ*	4,900 *UJ*	1,900 *UJ*	1,900 *UJ*
SD27	river	10/30/1997	SD27	0	0	0	3,200 *UJ*	1,300 *UJ*	1,300 *UJ*	3,200 *UJ*	1,300 *UJ*	1,300 *UJ*
SD28	upland	10/28/1997	SD28	0	0	0	2,400 *UJ*	940 *UJ*	940 *UJ*	2,400 *UJ*	940 *UJ*	940 *UJ*
SD29	upland	10/27/1997	SD29	0	0	0	1,200 *U*	480 *U*	480 *U*	1,200 *U*	480 *U*	480 *U*
SD30	upland	10/29/1997	SD30	0	0	0	1,200 *UJ*	480 *UJ*	480 *UJ*	1,200 *UJ*	480 *UJ*	480 *UJ*
SD31	river	10/30/1997	SD31	0	0	0	2,500 *UJ*	1,000 *UJ*	1,000 *UJ*	2,500 *UJ*	1,000 *UJ*	1,000 *UJ*
SD32	upland	10/28/1997	SD32	0	0	0	1,700 *UJ*	700 *UJ*	700 *UJ*	1,700 *UJ*	700 *UJ*	700 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	2-Nitroaniline (µg/kg dry)	2-Nitrophenol (µg/kg dry)	3,3'-Dichloro-benzidine (µg/kg dry)	3-Nitroaniline (µg/kg dry)	4-Bromophenyl-phenyl ether (µg/kg dry)	4-Chloro-3-methylphenol (µg/kg dry)
SD33	marsh	10/28/1997	SD33	0	0	0	2,100 *UJ*	850 *UJ*	850 *UJ*	2,100 *UJ*	850 *UJ*	850 *UJ*
SD34	upland	10/30/1997	SD34	0	0	0	1,400 *U*	580 *U*	580 *U*	1,400 *U*	580 *U*	580 *U*
SD35	marsh	10/30/1997	SD35	0	0	0	1,900 *UJ*	750 *UJ*	750 *UJ*	1,900 *UJ*	750 *UJ*	750 *UJ*
SD36	marsh	10/30/1997	SD36	0	0	0	1,200 *U*	480 *U*	480 *U*	1,200 *U*	480 *U*	480 *U*
SD37	marsh	10/30/1997	SD37	A	0	0	990 *U*	390 *U*	390 *U*	990 *U*	390 *U*	390 *U*
SD37	marsh	10/30/1997	SD37	B	0	0	1,000 *U*	400 *U*	400 *U*	1,000 *UJ*	400 *U*	400 *U*
SD38	river	6/24/1998	SD38	0	0	0	2,500 *UJ*	1,000 *UJ*	1,000 *UJ*	2,500 *UJ*	1,000 *UJ*	1,000 *UJ*
SD39	river	6/24/1998	SD39	A	0	0	11,000 *UJ*	4,300 *UJ*	4,300 *UJ*	11,000 *UJ*	4,300 *UJ*	4,300 *UJ*
SD39	river	6/24/1998	SD39	B	0	0	11,000 *UJ*	4,500 *UJ*	4,500 *UJ*	11,000 *UJ*	4,500 *UJ*	4,500 *UJ*
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	1,800 *UJ*	730 *UJ*	730 *R*	1,800 *UJ*	730 *UJ*	730 *UJ*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	1,500 *U*	610 *U*	610 *U*	1,500 *U*	610 *U*	610 *U*
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	1,600 *U*	620 *U*	620 *U*	1,600 *U*	620 *U*	620 *U*
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	1,600 *U*	620 *U*	620 *U*	1,600 *U*	620 *U*	620 *U*
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	2,100 *UJ*	830 *UJ*	830 *UJ*	2,100 *UJ*	830 *UJ*	830 *UJ*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	1,500 *U*	580 *U*	580 *U*	1,500 *U*	580 *U*	580 *U*
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	1,400 *U*	550 *U*	550 *U*	1,400 *U*	550 *U*	550 *U*
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	1,600 *U*	650 *U*	650 *U*	1,600 *U*	650 *U*	650 *U*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	2,800 *UJ*	1,100 *UJ*	1,100 *UJ*	2,800 *UJ*	1,100 *UJ*	1,100 *UJ*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	1,600 *U*	620 *U*	620 *U*	1,600 *U*	620 *U*	620 *U*
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	1,600 *U*	630 *U*	630 *U*	1,600 *U*	630 *U*	630 *U*
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	1,400 *U*	570 *U*	570 *U*	1,400 *U*	570 *U*	570 *U*
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	1,900 *UJ*	750 *UJ*	750 *UJ*	1,900 *UJ*	750 *UJ*	750 *UJ*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	1,400 *U*	570 *U*	570 *U*	1,400 *U*	570 *U*	570 *U*
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	1,400 *U*	560 *U*	560 *U*	1,400 *U*	560 *U*	560 *U*
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	1,500 *U*	600 *U*	600 *U*	1,500 *U*	600 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	1,500 *U*	600 *U*	600 *U*	1,500 *U*	600 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	1,500 *U*	580 *U*	580 *U*	1,500 *U*	580 *U*	580 *U*
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	1,500 *U*	600 *U*	600 *U*	1,500 *U*	600 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	1,400 *U*	570 *U*	570 *U*	1,400 *U*	570 *U*	570 *U*
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	1,800 *UJ*	710 *UJ*	710 *UJ*	1,800 *UJ*	710 *UJ*	710 *UJ*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	1,500 *U*	580 *U*	580 *U*	1,500 *U*	580 *U*	580 *U*
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	1,600 *U*	630 *U*	630 *U*	1,600 *U*	630 *U*	630 *U*
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	1,500 *U*	590 *U*	590 *U*	1,500 *U*	590 *U*	590 *U*
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	1,300 *U*	510 *U*	510 *U*	1,300 *U*	510 *U*	510 *U*
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	1,400 *U*	560 *U*	560 *UJ*	1,400 *U*	560 *U*	560 *U*
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	1,400 *U*	540 *U*	540 *U*	1,400 *U*	540 *U*	540 *U*
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	1,300 *U*	520 *U*	520 *U*	1,300 *U*	520 *U*	520 *U*
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	4,100 *UJ*	1,600 *UJ*	1,600 *UJ*	4,100 *UJ*	1,600 *UJ*	1,600 *UJ*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	1,600 *U*	640 *U*	640 *U*	1,600 *U*	640 *U*	640 *U*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	2-Nitroaniline (µg/kg dry)	2-Nitrophenol (µg/kg dry)	3,3'-Dichloro-benzidine (µg/kg dry)	3-Nitroaniline (µg/kg dry)	4-Bromophenyl-phenyl ether (µg/kg dry)	4-Chloro-3-methylphenol (µg/kg dry)
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	1,500 *U*	610 *U*	610 *U*	1,500 *U*	610 *U*	610 *U*
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	2,100 *UJ*	820 *UJ*	820 *UJ*	2,100 *UJ*	820 *UJ*	820 *UJ*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	5,200 *UJ*	2,100 *UJ*	2,100 *UJ*	5,200 *UJ*	2,100 *UJ*	2,100 *UJ*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	1,700 *UJ*	680 *UJ*	680 *UJ*	1,700 *UJ*	680 *UJ*	680 *UJ*
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	1,600 *U*	620 *U*	620 *U*	1,600 *U*	620 *U*	620 *U*
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	4,100 *UJ*	1,600 *UJ*	1,600 *UJ*	4,100 *UJ*	1,600 *UJ*	1,600 *UJ*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	1,800 *UJ*	730 *UJ*	730 *UJ*	1,800 *UJ*	730 *UJ*	730 *UJ*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	1,400 *U*	550 *U*	550 *U*	1,400 *U*	550 *U*	550 *U*
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	1,500 *U*	580 *U*	580 *U*	1,500 *U*	580 *U*	580 *U*
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	2,500 *UJ*	980 *UJ*	980 *UJ*	2,500 *UJ*	980 *UJ*	980 *UJ*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	1,000 *U*	410 *U*	410 *U*	1,000 *U*	410 *U*	410 *U*
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	1,700 *UJ*	670 *UJ*	670 *UJ*	1,700 *UJ*	670 *UJ*	670 *UJ*
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	1,500 *U*	590 *U*	590 *U*	1,500 *U*	590 *U*	590 *U*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	1,400 *U*	560 *U*	560 *UJ*	1,400 *U*	560 *U*	560 *U*
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	1,400 *U*	560 *U*	560 *U*	1,400 *U*	560 *U*	560 *U*
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	1,500 *U*	580 *U*	580 *U*	1,500 *U*	580 *U*	580 *U*
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	1,500 *U*	590 *U*	590 *U*	1,500 *U*	590 *U*	590 *U*
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	1,400 *UJ*	560 *UJ*	560 *UJ*	1,400 *UJ*	560 *UJ*	560 *UJ*

Note: PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	4-Chloroaniline (µg/kg dry)	4-Chlorophenyl-phenyl ether (µg/kg dry)	4-Methylphenol (µg/kg dry)	4-Nitroaniline (µg/kg dry)	4-Nitrophenol (µg/kg dry)	Acenaphthene (µg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	600 *U*	600 *U*	600 *U*	1,500 *U*	1,500 *U*	600 *U*
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	660 *U*	660 *U*	660 *U*	1,700 *U*	1,700 *U*	660 *U*
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	620 *U*	620 *U*	620 *U*	1,600 *U*	1,600 *U*	620 *U*
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	670 *UJ*	670 *UJ*	670 *UJ*	1,700 *UJ*	1,700 *UJ*	670 *UJ*
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	420 *U*	420 *U*	420 *U*	1,100 *UJ*	1,100 *UJ*	420 *U*
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	500 *U*	500 *U*	500 *U*	1,200 *UJ*	1,200 *UJ*	500 *U*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	440 *U*	440 *U*	440 *U*	1,100 *UJ*	1,100 *U*	440 *U*
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	530 *U*	530 *U*	530 *U*	1,300 *UJ*	1,300 *UJ*	530 *U*
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	740 *UJ*	740 *UJ*	740 *UJ*	1,900 *UJ*	1,900 *UJ*	740 *UJ*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	750 *UJ*	750 *UJ*	81 *J*	1,900 *UJ*	1,900 *UJ*	100 *J*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	700 *UJ*	700 *UJ*	90 *J*	1,800 *UJ*	1,800 *UJ*	160 *J*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	800 *UJ*	800 *UJ*	130 *J*	2,000 *UJ*	2,000 *UJ*	89 *J*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	780 *UJ*	780 *UJ*	780 *UJ*	2,000 *UJ*	2,000 *UJ*	780 *UJ*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	760 *UJ*	760 *UJ*	760 *UJ*	1,900 *UJ*	1,900 *UJ*	760 *UJ*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	720 *UJ*	720 *UJ*	720 *UJ*	1,800 *UJ*	1,800 *UJ*	720 *UJ*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	780 *UJ*	780 *UJ*	780 *UJ*	2,000 *UJ*	2,000 *UJ*	780 *UJ*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	590 *U*	590 *U*	590 *U*	1,500 *U*	1,500 *U*	590 *U*
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	700 *UJ*	700 *UJ*	110 *J*	1,800 *UJ*	1,800 *UJ*	100 *J*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	640 *UJ*	640 *UJ*	640 *UJ*	1,600 *UJ*	1,600 *UJ*	640 *UJ*
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	700 *UJ*	700 *UJ*	100 *J*	1,700 *UJ*	1,700 *UJ*	170 *J*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	870 *UJ*	870 *UJ*	870 *UJ*	2,200 *UJ*	2,200 *UJ*	870 *UJ*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	790 *UJ*	790 *UJ*	93 *J*	2,000 *UJ*	2,000 *UJ*	790 *UJ*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	720 *UJ*	720 *UJ*	80 *J*	1,800 *UJ*	1,800 *UJ*	76 *J*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	970 *UJ*	970 *UJ*	120 *J*	2,400 *UJ*	2,400 *UJ*	970 *UJ*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	3,000 *UJ*	3,000 *UJ*	1,200 *UJ*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	700 *UJ*	700 *UJ*	700 *UJ*	1,800 *UJ*	3,000 *J*	1,700 *J*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	670 *UJ*	670 *UJ*	670 *UJ*	1,700 *UJ*	1,700 *UJ*	140 *J*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	780 *UJ*	780 *UJ*	780 *UJ*	2,000 *UJ*	2,000 *UJ*	780 *UJ*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	3,200 *UJ*	3,200 *UJ*	1,300 *UJ*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	700 *UJ*	700 *UJ*	700 *UJ*	1,700 *UJ*	1,700 *UJ*	110 *J*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	680 *UJ*	680 *UJ*	680 *UJ*	1,700 *UJ*	1,700 *UJ*	680 *UJ*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	790 *UJ*	790 *UJ*	790 *UJ*	2,000 *UJ*	2,000 *UJ*	790 *UJ*
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6	830 *UJ*	830 *UJ*	830 *UJ*	2,100 *UJ*	2,100 *UJ*	830 *UJ*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	770 *UJ*	770 *UJ*	770 *UJ*	1,900 *UJ*	1,900 *UJ*	79 *J*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	780 *UJ*	780 *UJ*	780 *UJ*	2,000 *UJ*	2,000 *UJ*	780 *UJ*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	830 *UJ*	830 *UJ*	830 *UJ*	2,100 *UJ*	2,100 *UJ*	830 *UJ*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	860 *UJ*	860 *UJ*	860 *UJ*	2,200 *UJ*	2,200 *UJ*	860 *UJ*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	720 *UJ*	720 *UJ*	720 *UJ*	1,800 *UJ*	1,800 *UJ*	720 *UJ*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	670 *UJ*	670 *UJ*	670 *UJ*	1,700 *UJ*	1,700 *UJ*	670 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	4-Chloroaniline (µg/kg dry)	4-Chlorophenyl-phenyl ether (µg/kg dry)	4-Methylphenol (µg/kg dry)	4-Nitroaniline (µg/kg dry)	4-Nitrophenol (µg/kg dry)	Acenaphthene (µg/kg dry)
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	770 *UJ*	830 *UJ*	770 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	920 *UJ*	920 *UJ*	920 *UJ*	2,300 *UJ*	2,300 *UJ*	920 *UJ*
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	590 *U*	590 *U*	590 *U*	1,500 *U*	1,500 *UJ*	590 *U*
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	650 *U*	650 *U*	650 *U*	1,600 *U*	1,600 *UJ*	650 *U*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	750 *UJ*	750 *UJ*	1,200 *J*	1,900 *UJ*	1,900 *UJ*	750 *UJ*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	800 *UJ*	800 *UJ*	800 *UJ*	2,000 *UJ*	2,000 *UJ*	800 *UJ*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	590 *U*	590 *U*	590 *U*	1,500 *U*	1,500 *U*	590 *U*
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	600 *U*	600 *U*	600 *U*	1,500 *U*	1,500 *U*	600 *U*
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	650 *U*	650 *U*	85 *J*	1,600 *U*	1,600 *U*	650 *U*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	660 *U*	660 *U*	660 *UJ*	1,700 *U*	1,700 *U*	660 *U*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	580 *U*	580 *U*	580 *U*	1,400 *U*	1,400 *UJ*	580 *U*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	590 *U*	590 *U*	590 *U*	1,500 *U*	1,500 *UJ*	590 *U*
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	670 *UJ*	670 *UJ*	670 *UJ*	1,700 *UJ*	1,700 *UJ*	670 *UJ*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	830 *UJ*	830 *UJ*	830 *UJ*	2,100 *UJ*	2,100 *UJ*	830 *UJ*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	610 *U*	610 *U*	610 *U*	1,500 *UJ*	1,500 *UJ*	610 *U*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	600 *UJ*	600 *U*	600 *UJ*	1,500 *UJ*	1,500 *U*	600 *U*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	700 *UJ*	700 *UJ*	700 *UJ*	1,800 *UJ*	1,800 *UJ*	700 *UJ*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	870 *UJ*	870 *UJ*	870 *UJ*	2,200 *UJ*	2,200 *UJ*	870 *UJ*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	750 *UJ*	750 *UJ*	750 *UJ*	1,900 *UJ*	1,900 *UJ*	750 *UJ*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	820 *UJ*	820 *UJ*	820 *UJ*	2,100 *UJ*	2,100 *UJ*	820 *UJ*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	820 *UJ*	820 *UJ*	820 *UJ*	2,100 *UJ*	2,100 *UJ*	820 *UJ*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	970 *UJ*	970 *UJ*	970 *UJ*	2,400 *UJ*	2,400 *UJ*	970 *UJ*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	500 *U*	500 *U*	500 *U*	1,300 *UJ*	1,300 *UJ*	500 *U*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	550 *U*	550 *U*	550 *U*	1,400 *UJ*	1,400 *UJ*	550 *U*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	720 *UJ*	720 *UJ*	720 *UJ*	1,800 *UJ*	1,800 *UJ*	720 *UJ*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	920 *UJ*	920 *UJ*	920 *UJ*	2,300 *UJ*	2,300 *UJ*	920 *UJ*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	450 *U*	450 *U*	450 *U*	1,100 *UJ*	1,100 *UJ*	450 *U*
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	450 *U*	450 *U*	450 *U*	1,100 *UJ*	1,100 *UJ*	450 *U*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	720 *UJ*	720 *UJ*	720 *UJ*	1,800 *UJ*	1,800 *UJ*	720 *UJ*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	560 *U*	560 *U*	560 *UJ*	1,400 *U*	1,400 *U*	560 *U*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	610 *U*	610 *U*	610 *UJ*	1,500 *U*	1,500 *U*	610 *U*
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	620 *U*	620 *U*	620 *U*	1,600 *U*	1,600 *UJ*	620 *U*
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	590 *U*	590 *U*	590 *U*	1,500 *U*	1,500 *UJ*	590 *U*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	550 *U*	550 *U*	550 *U*	1,400 *U*	1,400 *UJ*	550 *U*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	570 *U*	570 *U*	570 *U*	1,400 *U*	1,400 *UJ*	570 *U*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	590 *U*	590 *U*	590 *U*	1,500 *U*	1,500 *UJ*	590 *U*
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	610 *U*	610 *U*	610 *U*	1,500 *U*	1,500 *UJ*	610 *U*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	890 *UJ*	890 *UJ*	890 *UJ*	2,200 *UJ*	2,200 *UJ*	890 *UJ*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	800 *UJ*	800 *UJ*	800 *UJ*	2,000 *UJ*	2,000 *UJ*	800 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	4-Chloroaniline (µg/kg dry)	4-Chlorophenyl-phenyl ether (µg/kg dry)	4-Methylphenol (µg/kg dry)	4-Nitroaniline (µg/kg dry)	4-Nitrophenol (µg/kg dry)	Acenaphthene (µg/kg dry)
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	2,300 *UJ*	2,300 *UJ*	2,300 *UJ*	5,700 *UJ*	5,700 *UJ*	2,300 *UJ*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	750 *UJ*	750 *UJ*	750 *UJ*	1,900 *UJ*	1,900 *UJ*	750 *UJ*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	890 *UJ*	890 *UJ*	890 *UJ*	2,200 *UJ*	2,200 *UJ*	890 *UJ*
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	800 *UJ*	800 *UJ*	800 *UJ*	2,000 *UJ*	2,000 *UJ*	800 *UJ*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	750 *UJ*	750 *UJ*	750 *UJ*	1,900 *UJ*	1,900 *UJ*	750 *UJ*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	730 *UJ*	730 *UJ*	730 *UJ*	1,800 *UJ*	1,800 *UJ*	730 *UJ*
SD01	Ruplnd	10/23/1997	SD01	0	0	0	520 *U*	520 *U*	520 *U*	1,300 *U*	1,300 *U*	520 *U*
SD02	Ruplnd	10/24/1997	SD02	0	0	0	470 *UJ*	470 *U*	470 *U*	1,200 *UJ*	1,200 *U*	470 *U*
SD03	upland	10/23/1997	SD03	0	0	0	580 *U*	580 *U*	580 *U*	1,400 *U*	1,400 *U*	580 *U*
SD04	upland	10/24/1997	SD04	0	0	0	600 *UJ*	600 *U*	600 *U*	1,500 *UJ*	1,500 *U*	600 *U*
SD05	upland	10/23/1997	SD05	0	0	0	1,000 *UJ*	1,000 *U*	1,000 *U*	2,500 *UJ*	2,500 *U*	660 *J*
SD06	upland	10/23/1997	SD06	0	0	0	1,700 *UJ*	1,700 *UJ*	1,700 *UJ*	4,400 *UJ*	4,400 *UJ*	1,700 *UJ*
SD07	upland	10/23/1997	SD07	0	0	0	5,000 *UJ*	5,000 *UJ*	5,000 *UJ*	12,000 *UJ*	12,000 *UJ*	2,300 *J*
SD08	upland	10/23/1997	SD08	0	0	0	7,700 *U*	7,700 *U*	7,700 *U*	19,000 *UJ*	19,000 *UJ*	7,700 *U*
SD09	upland	10/28/1997	SD09	0	0	0	820 *UJ*	820 *UJ*	820 *UJ*	2,100 *UJ*	2,100 *UJ*	820 *UJ*
SD10	upland	10/28/1997	SD10	0	0	0	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	3,200 *UJ*	3,200 *UJ*	1,300 *UJ*
SD11	upland	10/28/1997	SD11	0	0	0	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	4,000 *UJ*	4,000 *UJ*	1,600 *UJ*
SD12	upland	10/28/1997	SD12	0	0	0	1,100 *UJ*	1,100 *UJ*	1,100 *UJ*	2,700 *UJ*	2,700 *UJ*	1,100 *UJ*
SD13	upland	10/27/1997	SD13	0	0	0	520 *U*	520 *U*	520 *U*	1,300 *U*	1,300 *U*	520 *U*
SD14	upland	10/27/1997	SD14	0	0	0	620 *U*	620 *U*	620 *U*	1,600 *U*	1,600 *U*	620 *U*
SD15	upland	10/24/1997	SD15	0	0	0	380 *U*	380 *U*	380 *U*	960 *U*	960 *U*	380 *U*
SD16	upland	10/27/1997	SD16	0	0	0	550 *U*	550 *U*	550 *U*	1,400 *U*	1,400 *U*	550 *U*
SD17	upland	10/27/1997	SD17	0	0	0	650 *U*	650 *U*	650 *U*	1,600 *U*	1,600 *U*	650 *U*
SD18	upland	10/29/1997	SD18	0	0	0	600 *UJ*	600 *UJ*	600 *UJ*	1,500 *UJ*	1,500 *UJ*	600 *UJ*
SD19	upland	10/24/1997	SD19	0	0	0	400 *U*	400 *U*	400 *U*	1,000 *U*	1,000 *U*	400 *U*
SD20	upland	10/24/1997	SD20	A	0	0	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	29,000 *UJ*	29,000 *UJ*	11,000 *UJ*
SD20	upland	10/24/1997	SD20	B	0	0	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	28,000 *UJ*	28,000 *UJ*	11,000 *UJ*
SD21	Ruplnd	10/24/1997	SD21	0	0	0	370 *U*	370 *U*	370 *U*	930 *U*	930 *U*	370 *U*
SD22	upland	10/24/1997	SD22	0	0	0	400 *U*	400 *U*	400 *U*	1,000 *U*	1,000 *U*	400 *U*
SD23	upland	10/24/1997	SD23	0	0	0	380 *U*	380 *U*	380 *U*	940 *U*	940 *U*	380 *U*
SD24	river	10/27/1997	SD24	0	0	0	970 *UJ*	970 *UJ*	970 *UJ*	2,400 *UJ*	2,400 *UJ*	970 *UJ*
SD25	river	10/29/1997	SD25	0	0	0	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*	2,500 *UJ*	2,500 *UJ*	1,000 *UJ*
SD26	marsh	10/29/1997	SD26	0	0	0	1,900 *UJ*	1,900 *UJ*	1,900 *UJ*	4,900 *UJ*	4,900 *UJ*	1,900 *UJ*
SD27	river	10/30/1997	SD27	0	0	0	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	3,200 *UJ*	3,200 *UJ*	1,300 *UJ*
SD28	upland	10/28/1997	SD28	0	0	0	940 *UJ*	940 *UJ*	940 *UJ*	2,400 *UJ*	2,400 *UJ*	940 *UJ*
SD29	upland	10/27/1997	SD29	0	0	0	480 *U*	480 *U*	480 *U*	1,200 *U*	1,200 *U*	480 *U*
SD30	upland	10/29/1997	SD30	0	0	0	480 *UJ*	480 *UJ*	480 *UJ*	1,200 *UJ*	1,200 *UJ*	480 *UJ*
SD31	river	10/30/1997	SD31	0	0	0	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*	2,500 *UJ*	2,500 *UJ*	1,000 *UJ*
SD32	upland	10/28/1997	SD32	0	0	0	700 *UJ*	700 *UJ*	700 *UJ*	1,700 *UJ*	1,700 *UJ*	700 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	4-Chloroaniline (µg/kg dry)	4-Chlorophenyl-phenyl ether (µg/kg dry)	4-Methylphenol (µg/kg dry)	4-Nitroaniline (µg/kg dry)	4-Nitrophenol (µg/kg dry)	Acenaphthene (µg/kg dry)
SD33	marsh	10/28/1997	SD33	0	0	0	850 *UJ*	850 *UJ*	850 *UJ*	2,100 *UJ*	2,100 *UJ*	850 *UJ*
SD34	upland	10/30/1997	SD34	0	0	0	580 *UJ*	580 *U*	580 *U*	1,400 *U*	1,400 *U*	580 *U*
SD35	marsh	10/30/1997	SD35	0	0	0	750 *UJ*	750 *UJ*	750 *UJ*	1,900 *UJ*	1,900 *UJ*	750 *UJ*
SD36	marsh	10/30/1997	SD36	0	0	0	480 *UJ*	480 *U*	480 *U*	1,200 *U*	1,200 *U*	480 *U*
SD37	marsh	10/30/1997	SD37	A	0	0	390 *UJ*	390 *U*	390 *U*	990 *U*	990 *U*	390 *U*
SD37	marsh	10/30/1997	SD37	B	0	0	400 *UJ*	400 *U*	400 *U*	1,000 *UJ*	1,000 *U*	400 *U*
SD38	river	6/24/1998	SD38	0	0	0	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*	2,500 *UJ*	2,500 *UJ*	1,000 *UJ*
SD39	river	6/24/1998	SD39	A	0	0	4,300 *UJ*	4,300 *UJ*	4,300 *UJ*	11,000 *UJ*	11,000 *UJ*	4,300 *UJ*
SD39	river	6/24/1998	SD39	B	0	0	4,500 *UJ*	4,500 *UJ*	4,500 *UJ*	11,000 *UJ*	11,000 *UJ*	4,500 *UJ*
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	730 *UJ*	730 *UJ*	730 *UJ*	1,800 *UJ*	1,800 *UJ*	730 *UJ*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	610 *U*	610 *U*	610 *U*	1,500 *U*	1,500 *U*	610 *U*
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	620 *U*	620 *U*	620 *U*	1,600 *U*	1,600 *U*	620 *U*
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	620 *U*	620 *U*	620 *U*	1,600 *U*	1,600 *U*	620 *U*
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	830 *UJ*	830 *UJ*	830 *UJ*	2,100 *UJ*	2,100 *UJ*	830 *UJ*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	580 *U*	580 *U*	580 *U*	1,500 *U*	1,500 *U*	580 *U*
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	550 *U*	550 *U*	550 *U*	1,400 *U*	1,400 *U*	550 *U*
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	650 *U*	650 *U*	650 *U*	1,600 *U*	1,600 *U*	650 *U*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	1,100 *UJ*	1,100 *UJ*	1,100 *UJ*	2,800 *UJ*	2,800 *UJ*	1,100 *UJ*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	620 *U*	620 *U*	620 *U*	1,600 *U*	1,600 *U*	620 *U*
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	630 *U*	630 *U*	630 *U*	1,600 *U*	1,600 *U*	630 *U*
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	570 *U*	570 *U*	570 *U*	1,400 *U*	1,400 *U*	570 *U*
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	750 *UJ*	750 *UJ*	750 *UJ*	1,900 *UJ*	1,900 *UJ*	750 *UJ*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	570 *U*	570 *U*	570 *U*	1,400 *U*	1,400 *U*	570 *U*
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	560 *U*	560 *U*	560 *U*	1,400 *U*	1,400 *U*	560 *U*
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	600 *U*	600 *U*	600 *U*	1,500 *U*	1,500 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	600 *U*	600 *U*	600 *U*	1,500 *U*	1,500 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	580 *U*	580 *U*	580 *U*	1,500 *U*	1,500 *U*	580 *U*
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	600 *U*	600 *U*	600 *U*	1,500 *U*	1,500 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	570 *U*	570 *U*	570 *U*	1,400 *U*	1,400 *U*	570 *U*
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	710 *UJ*	710 *UJ*	710 *UJ*	1,800 *UJ*	1,800 *UJ*	710 *UJ*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	580 *U*	580 *U*	580 *U*	1,500 *U*	1,500 *U*	580 *U*
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	630 *U*	630 *U*	630 *U*	1,600 *U*	1,600 *U*	630 *U*
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	590 *U*	590 *U*	590 *U*	1,500 *U*	1,500 *U*	590 *U*
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	510 *U*	510 *U*	510 *U*	1,300 *U*	1,300 *U*	510 *U*
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	560 *U*	560 *U*	560 *U*	1,400 *U*	1,400 *U*	560 *U*
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	540 *U*	540 *U*	540 *U*	1,400 *U*	1,400 *U*	540 *U*
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	520 *U*	520 *U*	520 *U*	1,300 *U*	1,300 *U*	520 *U*
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	4,100 *UJ*	4,100 *UJ*	1,600 *UJ*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	640 *U*	640 *U*	640 *U*	1,600 *U*	1,600 *U*	640 *U*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	4-Chloroaniline (µg/kg dry)	4-Chlorophenyl-phenyl ether (µg/kg dry)	4-Methylphenol (µg/kg dry)	4-Nitroaniline (µg/kg dry)	4-Nitrophenol (µg/kg dry)	Acenaphthene (µg/kg dry)
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	610 *U*	610 *U*	610 *U*	1,500 *U*	1,500 *U*	610 *U*
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	820 *UJ*	820 *UJ*	140 *J*	2,100 *UJ*	2,100 *UJ*	820 *UJ*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	2,100 *UJ*	2,100 *UJ*	2,100 *UJ*	5,200 *UJ*	5,200 *UJ*	2,100 *UJ*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	680 *UJ*	680 *UJ*	680 *UJ*	1,700 *UJ*	1,700 *UJ*	680 *UJ*
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	620 *U*	620 *U*	620 *U*	1,600 *U*	1,600 *U*	620 *U*
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	4,100 *UJ*	4,100 *UJ*	1,600 *UJ*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	730 *UJ*	730 *UJ*	730 *UJ*	1,800 *UJ*	1,800 *UJ*	730 *UJ*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	550 *U*	550 *U*	550 *U*	1,400 *U*	1,400 *U*	550 *U*
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	580 *U*	580 *U*	580 *U*	1,500 *U*	1,500 *U*	580 *U*
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	980 *UJ*	980 *UJ*	980 *UJ*	2,500 *UJ*	2,500 *UJ*	980 *UJ*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	410 *U*	410 *U*	410 *U*	1,000 *U*	1,000 *U*	410 *U*
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	670 *UJ*	670 *UJ*	670 *UJ*	1,700 *UJ*	1,700 *UJ*	670 *UJ*
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	590 *U*	590 *U*	590 *U*	1,500 *U*	1,500 *U*	590 *U*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	560 *U*	560 *U*	560 *U*	1,400 *U*	1,400 *U*	160 *J*
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	560 *U*	560 *U*	560 *U*	1,400 *U*	1,400 *U*	560 *U*
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	580 *U*	580 *U*	580 *U*	1,500 *U*	1,500 *U*	580 *U*
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	590 *U*	590 *U*	590 *U*	1,500 *U*	1,500 *U*	590 *U*
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	560 *UJ*	560 *UJ*	560 *UJ*	1,400 *UJ*	1,400 *UJ*	560 *UJ*

Note:
PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Acenaph-thylene (µg/kg dry)	Acetophenone (µg/kg dry)	Anthracene (µg/kg dry)	Atrazine (µg/kg dry)	Benz[a]-anthracene (µg/kg dry)	Benzaldehyde (µg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	600 *U*	600 *U*	600 *U*	600 *U*	110 *J*	600 *U*
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	660 *U*	660 *U*	660 *U*	660 *U*	120 *J*	660 *U*
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	620 *U*	620 *U*	620 *U*	620 *U*	140 *J*	620 *U*
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	670 *UJ*	670 *UJ*	670 *UJ*	670 *UJ*	150 *J*	670 *UJ*
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	420 *U*	420 *U*	420 *U*	420 *UJ*	420 *U*	420 *U*
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	500 *U*	500 *U*	500 *U*	500 *UJ*	63 *J*	500 *U*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	440 *U*	440 *U*	440 *U*	440 *UJ*	57 *J*	440 *U*
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	530 *U*	530 *U*	530 *U*	530 *UJ*	120 *J*	530 *U*
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	88 *J*	75 *J*	120 *J*	740 *UJ*	410 *J*	740 *UJ*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	77 *J*	90 *J*	190 *J*	750 *UJ*	560 *J*	110 *J*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	170 *J*	87 *J*	660 *J*	700 *UJ*	970 *J*	130 *J*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	180 *J*	800 *UJ*	370 *J*	800 *UJ*	970 *J*	120 *J*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	780 *UJ*	780 *UJ*	86 *J*	780 *UJ*	290 *J*	780 *UJ*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	760 *UJ*	760 *UJ*	190 *J*	760 *UJ*	750 *J*	82 *J*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	720 *UJ*	720 *UJ*	260 *J*	720 *UJ*	570 *J*	97 *J*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	780 *UJ*	780 *UJ*	120 *J*	780 *UJ*	390 *J*	780 *UJ*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	100 *J*	590 *U*	190 *J*	590 *U*	500 *J*	65 *J*
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	130 *J*	700 *UJ*	260 *J*	700 *UJ*	790 *J*	120 *J*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	84 *J*	640 *UJ*	190 *J*	640 *UJ*	530 *J*	65 *J*
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	190 *J*	700 *UJ*	510 *J*	700 *UJ*	890 *J*	140 *J*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	870 *UJ*	870 *UJ*	160 *J*	870 *UJ*	470 *J*	870 *UJ*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	110 *J*	790 *UJ*	240 *J*	790 *UJ*	630 *J*	790 *UJ*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	120 *J*	720 *UJ*	490 *J*	720 *UJ*	850 *J*	78 *J*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	200 *J*	970 *UJ*	380 *J*	970 *UJ*	1,100 *J*	100 *J*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	1,200 *UJ*	1,200 *UJ*	130 *J*	1,200 *UJ*	400 *J*	1,200 *UJ*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	700 *UJ*	700 *UJ*	140 *J*	700 *UJ*	170 *J*	700 *UJ*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	670 *UJ*	670 *UJ*	220 *J*	670 *UJ*	470 *J*	670 *UJ*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	780 *UJ*	780 *UJ*	190 *J*	780 *UJ*	360 *J*	780 *UJ*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	160 *J*	1,300 *UJ*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	700 *UJ*	700 *UJ*	290 *J*	700 *UJ*	500 *J*	700 *UJ*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	680 *UJ*	680 *UJ*	220 *J*	680 *UJ*	390 *J*	680 *UJ*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	790 *UJ*	790 *UJ*	790 *UJ*	790 *UJ*	110 *J*	790 *UJ*
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6	830 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*	210 *J*	830 *UJ*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	770 *UJ*	770 *UJ*	160 *J*	770 *UJ*	330 *J*	770 *UJ*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	780 *UJ*	780 *UJ*	780 *UJ*	780 *UJ*	150 *J*	780 *UJ*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	830 *UJ*	830 *UJ*	110 *J*	830 *UJ*	230 *J*	830 *UJ*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	860 *UJ*	860 *UJ*	860 *UJ*	860 *UJ*	130 *J*	860 *UJ*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	720 *UJ*	320 *J*	140 *J*	720 *UJ*	540 *J*	120 *J*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	670 *UJ*	670 *UJ*	100 *J*	670 *UJ*	350 *J*	670 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Acenaph-thylene (µg/kg dry)	Acetophenone (µg/kg dry)	Anthracene (µg/kg dry)	Atrazine (µg/kg dry)	Benz[a]-anthracene (µg/kg dry)	Benzaldehyde (µg/kg dry)
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	830 *UJ*	770 *UJ*	830 *UJ*	830 *UJ*	2,100 *UJ*	770 *UJ*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	920 *UJ*	920 *UJ*	920 *UJ*	920 *UJ*	210 *J*	920 *UJ*
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	590 *U*	590 *U*	590 *U*	590 *U*	200 *J*	590 *UJ*
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	650 *U*	650 *U*	650 *U*	650 *U*	270 *J*	650 *UJ*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	750 *UJ*	750 *UJ*	180 *J*	750 *UJ*	660 *J*	750 *UJ*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	93 *J*	800 *UJ*	120 *J*	800 *UJ*	380 *J*	800 *UJ*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	590 *U*	590 *U*	69 *J*	590 *U*	200 *J*	590 *U*
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	95 *J*	650 *U*	170 *J*	650 *U*	530 *J*	66 *J*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	660 *U*	660 *U*	660 *U*	660 *U*	230 *J*	660 *UJ*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	580 *U*	580 *U*	580 *U*	580 *U*	230 *J*	580 *UJ*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	590 *U*	590 *U*	590 *U*	590 *U*	590 *U*	590 *UJ*
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	670 *UJ*	670 *UJ*	90 *J*	670 *U*	430 *J*	670 *UJ*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	830 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*	250 *J*	830 *UJ*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	610 *U*	610 *U*	610 *U*	610 *U*	150 *J*	610 *U*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	600 *U*	600 *U*	600 *U*	600 *U*	150 *J*	600 *U*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	700 *UJ*	700 *UJ*	700 *UJ*	700 *UJ*	250 *J*	700 *UJ*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	870 *UJ*	870 *UJ*	870 *UJ*	870 *UJ*	190 *J*	870 *UJ*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	750 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*	200 *J*	750 *UJ*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	820 *UJ*	820 *UJ*	820 *UJ*	820 *UJ*	260 *J*	820 *UJ*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	820 *UJ*	820 *UJ*	820 *UJ*	820 *UJ*	240 *J*	820 *UJ*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	970 *UJ*	970 *UJ*	970 *UJ*	970 *UJ*	110 *J*	970 *UJ*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	500 *U*	500 *U*	500 *U*	500 *U*	500 *U*	500 *U*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	550 *U*	550 *U*	550 *U*	550 *U*	550 *U*	550 *U*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	720 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*	94 *J*	720 *UJ*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	920 *UJ*	920 *UJ*	920 *UJ*	920 *UJ*	920 *UJ*	920 *UJ*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	450 *U*	450 *U*	450 *U*	450 *U*	450 *U*	450 *U*
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	450 *U*	450 *U*	450 *U*	450 *U*	450 *U*	450 *U*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	720 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	560 *U*	560 *U*	560 *U*	560 *U*	95 *J*	560 *UJ*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	610 *U*	610 *U*	610 *U*	610 *U*	610 *U*	610 *UJ*
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*	620 *UJ*
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	590 *U*	590 *U*	590 *U*	590 *U*	92 *J*	590 *UJ*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	550 *U*	550 *U*	550 *U*	550 *U*	76 *J*	550 *UJ*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	570 *U*	570 *U*	570 *U*	570 *U*	570 *U*	570 *UJ*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	590 *U*	590 *U*	590 *U*	590 *U*	590 *U*	590 *UJ*
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	610 *U*	610 *U*	610 *U*	610 *U*	160 *J*	610 *UJ*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	890 *UJ*	890 *UJ*	890 *UJ*	890 *UJ*	890 *UJ*	890 *UJ*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	800 *UJ*	800 *UJ*	800 *UJ*	800 *UJ*	250 *J*	800 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Acenaph- thylene (µg/kg dry)	Acetophenone (µg/kg dry)	Anthracene (µg/kg dry)	Atrazine (µg/kg dry)	Benz[a]- anthracene (µg/kg dry)	Benzaldehyde (µg/kg dry)
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	2,300 *UJ*	2,300 *UJ*	2,300 *UJ*	2,300 *UJ*	240 *J*	2,300 *UJ*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	750 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*	190 *J*	750 *UJ*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	890 *UJ*	890 *UJ*	890 *UJ*	890 *UJ*	170 *J*	890 *UJ*
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	800 *UJ*	800 *UJ*	800 *UJ*	800 *UJ*	270 *J*	800 *UJ*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	750 *UJ*	750 *UJ*	100 *J*	750 *UJ*	360 *J*	750 *UJ*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	730 *UJ*	730 *UJ*	730 *UJ*	730 *UJ*	190 *J*	730 *UJ*
SD01	Ruplnd	10/23/1997	SD01	0	0	0	520 *U*		520 *U*		190 *J*	
SD02	Ruplnd	10/24/1997	SD02	0	0	0	470 *U*		470 *U*		210 *J*	
SD03	upland	10/23/1997	SD03	0	0	0	580 *U*		230 *J*		140 *J*	
SD04	upland	10/24/1997	SD04	0	0	0	600 *U*		600 *U*		600 *U*	
SD05	upland	10/23/1997	SD05	0	0	0	1,000 *U*		810 *J*		1,000 *U*	
SD06	upland	10/23/1997	SD06	0	0	0	1,700 *UJ*		1,700 *UJ*		1,700 *UJ*	
SD07	upland	10/23/1997	SD07	0	0	0	520 *J*		3,900 *J*		9,000 *J*	
SD08	upland	10/23/1997	SD08	0	0	0	7,700 *U*		1,100 *J*		7,700 *U*	
SD09	upland	10/28/1997	SD09	0	0	0	820 *UJ*		820 *UJ*		820 *UJ*	
SD10	upland	10/28/1997	SD10	0	0	0	1,300 *UJ*		1,300 *UJ*		1,300 *UJ*	
SD11	upland	10/28/1997	SD11	0	0	0	1,600 *UJ*		500 *J*		1,600 *UJ*	
SD12	upland	10/28/1997	SD12	0	0	0	1,100 *UJ*		1,100 *UJ*		1,100 *UJ*	
SD13	upland	10/27/1997	SD13	0	0	0	520 *U*		63 *J*		570	
SD14	upland	10/27/1997	SD14	0	0	0	620 *U*		620 *U*		340 *J*	
SD15	upland	10/24/1997	SD15	0	0	0	380 *U*		380 *U*		380 *U*	
SD16	upland	10/27/1997	SD16	0	0	0	88 *J*		99 *J*		580	
SD17	upland	10/27/1997	SD17	0	0	0	650 *U*		650 *U*		220 *J*	
SD18	upland	10/29/1997	SD18	0	0	0	600 *UJ*		600 *UJ*		600 *UJ*	
SD19	upland	10/24/1997	SD19	0	0	0	400 *U*		400 *U*		400 *U*	
SD20	upland	10/24/1997	SD20	A	0	0	11,000 *UJ*		11,000 *UJ*		11,000 *UJ*	
SD20	upland	10/24/1997	SD20	B	0	0	11,000 *UJ*		11,000 *UJ*		11,000 *UJ*	
SD21	Ruplnd	10/24/1997	SD21	0	0	0	370 *U*		370 *U*		370 *U*	
SD22	upland	10/24/1997	SD22	0	0	0	400 *U*		400 *U*		400 *U*	
SD23	upland	10/24/1997	SD23	0	0	0	380 *U*		380 *U*		380 *U*	
SD24	river	10/27/1997	SD24	0	0	0	970 *UJ*		970 *UJ*		970 *UJ*	
SD25	river	10/29/1997	SD25	0	0	0	1,000 *UJ*		1,000 *UJ*		120 *J*	
SD26	marsh	10/29/1997	SD26	0	0	0	1,900 *UJ*		1,900 *UJ*		1,900 *UJ*	
SD27	river	10/30/1997	SD27	0	0	0	1,300 *UJ*		1,300 *UJ*		180 *J*	
SD28	upland	10/28/1997	SD28	0	0	0	940 *UJ*		940 *UJ*		95 *J*	
SD29	upland	10/27/1997	SD29	0	0	0	480 *U*		480 *U*		480 *U*	
SD30	upland	10/29/1997	SD30	0	0	0	480 *UJ*		50 *J*		64 *J*	
SD31	river	10/30/1997	SD31	0	0	0	1,000 *UJ*		1,000 *UJ*		370 *J*	
SD32	upland	10/28/1997	SD32	0	0	0	700 *UJ*		700 *UJ*		61 *J*	

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Acenaph-thylene (µg/kg dry)	Acetophenone (µg/kg dry)	Anthracene (µg/kg dry)	Atrazine (µg/kg dry)	Benz[a]-anthracene (µg/kg dry)	Benzaldehyde (µg/kg dry)
SD33	marsh	10/28/1997	SD33	0	0	0	850 *UJ*		850 *UJ*		100 *J*	
SD34	upland	10/30/1997	SD34	0	0	0	580 *U*		580 *U*		580 *U*	
SD35	marsh	10/30/1997	SD35	0	0	0	750 *UJ*		750 *UJ*		300 *J*	
SD36	marsh	10/30/1997	SD36	0	0	0	480 *U*		480 *U*		480 *U*	
SD37	marsh	10/30/1997	SD37	A	0	0	390 *U*		390 *U*		390 *U*	
SD37	marsh	10/30/1997	SD37	B	0	0	400 *U*		400 *U*		58 *J*	
SD38	river	6/24/1998	SD38	0	0	0	1,000 *UJ*		130 *J*		400 *J*	
SD39	river	6/24/1998	SD39	A	0	0	4,300 *UJ*		4,300 *UJ*		4,300 *UJ*	
SD39	river	6/24/1998	SD39	B	0	0	4,500 *UJ*		4,500 *UJ*		540 *J*	
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	730 *UJ*	730 *UJ*	730 *UJ*	730 *UJ*	730 *R*	95 *J*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	610 *U*	140 *J*	610 *U*	610 *U*	150 *J*	78 *J*
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	80 *J*	620 *U*	72 *J*	620 *U*	260 *J*	85 *J*
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	620 *U*	67 *J*	620 *U*	620 *U*	90 *J*	620 *U*
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	830 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*	130 *J*	830 *UJ*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	67 *J*	580 *U*	580 *U*	580 *U*	210 *J*	78 *J*
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	60 *J*	550 *U*	550 *U*	550 *U*	210 *J*	62 *J*
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	99 *J*	650 *U*	66 *J*	650 *U*	250 *J*	70 *J*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	1,100 *UJ*	1,100 *UJ*	1,100 *UJ*	1,100 *UJ*	1,100 *UJ*	1,100 *UJ*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	620 *U*	620 *U*	620 *U*	620 *U*	190 *J*	620 *U*
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	130 *J*	630 *U*	120 *J*	630 *U*	470 *J*	79 *J*
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	78 *J*	570 *U*	570 *U*	570 *U*	200 *J*	570 *U*
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	90 *J*	750 *UJ*	750 *UJ*	750 *UJ*	210 *J*	140 *J*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	570 *U*	570 *U*	570 *U*	570 *U*	65 *J*	570 *U*
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	560 *U*	560 *U*	560 *U*	560 *U*	140 *J*	560 *U*
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	600 *U*	600 *U*	600 *U*	600 *U*	78 *J*	600 *U*
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	580 *U*	580 *U*	580 *U*	580 *U*	80 *J*	580 *U*
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	600 *U*	65 *J*	600 *U*	600 *U*	130 *J*	600 *U*
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	570 *U*	570 *U*	570 *U*	570 *U*	570 *U*	570 *U*
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	710 *UJ*	710 *UJ*	710 *UJ*	710 *UJ*	91 *J*	77 *J*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	580 *U*	580 *U*	580 *U*	580 *U*	100 *J*	580 *U*
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	630 *U*	630 *U*	630 *U*	630 *U*	630 *U*	630 *U*
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	190 *J*	190 *J*	150 *J*	590 *U*	290 *J*	590 *U*
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	510 *U*	510 *U*	67 *J*	510 *U*	190 *J*	62 *J*
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	110 *J*	560 *U*	120 *J*	560 *U*	440 *J*	83 *J*
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	540 *U*	540 *U*	540 *U*	540 *U*	540 *U*	540 *U*
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	71 *J*	520 *U*	520 *U*	520 *U*	190 *J*	520 *U*
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	640 *U*	640 *U*	72 *J*	640 *U*	260 *J*	640 *U*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Acenaph-thylene (µg/kg dry)	Acetophenone (µg/kg dry)	Anthracene (µg/kg dry)	Atrazine (µg/kg dry)	Benz[a]-anthracene (µg/kg dry)	Benzaldehyde (µg/kg dry)
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	610 *U*	610 *U*	610 *U*	610 *U*	100 *J*	610 *U*
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	84 *J*	820 *UJ*	110 *J*	820 *UJ*	340 *J*	820 *UJ*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	2,100 *UJ*	2,100 *UJ*	2,100 *UJ*	2,100 *UJ*	2,100 *UJ*	2,100 *UJ*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	680 *UJ*	680 *UJ*	680 *UJ*	680 *UJ*	140 *J*	680 *UJ*
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	300 *J*	1,600 *UJ*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	730 *UJ*	730 *UJ*	730 *UJ*	730 *UJ*	730 *UJ*	730 *UJ*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	550 *U*	550 *U*	550 *U*	550 *U*	550 *U*	550 *U*
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	580 *U*	580 *U*	580 *U*	580 *U*	580 *U*	580 *U*
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	980 *UJ*	980 *UJ*	980 *UJ*	980 *UJ*	980 *UJ*	980 *UJ*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	410 *U*	740	410 *U*	410 *U*	48 *J*	280 *J*
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	670 *UJ*	670 *UJ*	670 *UJ*	670 *UJ*	190 *J*	100 *J*
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	590 *U*	590 *U*	70 *J*	590 *U*	300 *J*	64 *J*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	560 *U*	560 *U*	360 *J*	560 *U*	220 *J*	560 *U*
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	58 *J*	560 *U*	560 *U*	560 *U*	64 *J*	560 *U*
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	580 *U*	580 *U*	580 *U*	580 *U*	110 *J*	580 *U*
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	590 *U*	590 *U*	590 *U*	590 *U*	100 *J*	590 *U*
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	120 *J*	560 *UJ*	75 *J*	560 *UJ*	300 *J*	560 *UJ*

Note:
PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Benzo[a]pyrene (µg/kg dry)	Benzo[b]-fluoranthene (µg/kg dry)	Benzo[ghi] perylene (µg/kg dry)	Benzo[k]-fluoranthene (µg/kg dry)	Biphenyl (µg/kg dry)	bis[2-chloroethoxy]-methane (µg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	160 *J*	200 *J*	61 *J*	170 *J*	600 *U*	600 *U*
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	180 *J*	180 *J*	71 *J*	140 *J*	660 *U*	660 *U*
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	160 *J*	130 *J*	620 *UJ*	130 *J*	620 *U*	620 *U*
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	220 *J*	250 *J*	73 *J*	230 *J*	670 *UJ*	670 *UJ*
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	420 *U*	420 *U*	420 *U*	420 *U*	420 *U*	420 *U*
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	68 *J*	97 *J*	500 *U*	500 *U*	500 *U*	500 *U*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	64 *J*	440 *U*	50 *J*	97 *J*	440 *U*	440 *U*
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	120 *J*	120 *J*	530 *U*	130 *J*	530 *U*	530 *U*
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	500 *J*	540 *J*	220 *J*	530 *J*	740 *UJ*	740 *UJ*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	480 *J*	560 *J*	140 *J*	490 *J*	750 *UJ*	750 *UJ*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	660 *J*	680 *J*	310 *J*	880 *J*	97 *J*	700 *UJ*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	690 *J*	610 *J*	240 *J*	710 *J*	98 *J*	800 *UJ*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	230 *J*	780 *UJ*	160 *J*	430 *J*	780 *UJ*	780 *UJ*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	370 *J*	760 *UJ*	200 *J*	690 *J*	760 *UJ*	760 *UJ*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	370 *J*	720 *UJ*	140 *J*	690 *J*	720 *UJ*	720 *UJ*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	240 *J*	420 *J*	150 *J*	780 *UJ*	780 *UJ*	780 *UJ*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	440 *J*	440 *J*	220 *J*	490 *J*	590 *U*	590 *U*
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	690 *J*	650 *J*	200 *J*	750 *J*	700 *UJ*	700 *UJ*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	390 *J*	410 *J*	110 *J*	420 *J*	640 *UJ*	640 *UJ*
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	710 *J*	700 *J*	290 *J*	770 *J*	98 *J*	700 *UJ*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	460 *J*	620 *J*	150 *J*	530 *J*	870 *UJ*	870 *UJ*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	530 *J*	590 *J*	180 *J*	620 *J*	790 *UJ*	790 *UJ*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	570 *J*	580 *J*	270 *J*	730 *J*	82 *J*	720 *UJ*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	930 *J*	920 *J*	470 *J*	940 *J*	970 *UJ*	970 *UJ*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	320 *J*	1,200 *UJ*	220 *J*	560 *J*	1,200 *UJ*	1,200 *UJ*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	94 *J*	130 *J*	700 *UJ*	98 *J*	700 *UJ*	700 *UJ*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	370 *J*	670 *UJ*	180 *J*	670 *J*	670 *UJ*	670 *UJ*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	210 *J*	780 *UJ*	100 *J*	400 *J*	780 *UJ*	780 *UJ*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	170 *J*	200 *J*	1,300 *UJ*	190 *J*	1,300 *UJ*	1,300 *UJ*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	350 *J*	420 *J*	240 *J*	340 *J*	700 *UJ*	700 *UJ*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	260 *J*	680 *UJ*	120 *J*	490 *J*	680 *UJ*	680 *UJ*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	120 *J*	210 *J*		790 *UJ*	790 *UJ*	790 *UJ*
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6	200 *J*	220 *J*	160 *J*	190 *J*	830 *UJ*	830 *UJ*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	340 *J*	770 *UJ*	180 *J*	570 *J*	770 *UJ*	770 *UJ*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	130 *J*	120 *J*	88 *J*	120 *J*	780 *UJ*	780 *UJ*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	190 *J*	320 *J*	120 *J*	830 *UJ*	830 *UJ*	830 *UJ*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	130 *J*	210 *J*	96 *J*	860 *UJ*	860 *UJ*	860 *UJ*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	510 *J*	1,100 *J*	230 *J*	720 *UJ*	720 *UJ*	720 *UJ*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	360 *J*	590 *J*	180 *J*	670 *UJ*	670 *UJ*	670 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Benzo[a]pyrene (µg/kg dry)	Benzo[b]-fluoranthene (µg/kg dry)	Benzo[ghi] perylene (µg/kg dry)	Benzo[k]-fluoranthene (µg/kg dry)	Biphenyl (µg/kg dry)	bis[2-chloroethoxy]-methane (µg/kg dry)
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	2,100 *UJ*	2,100 *UJ*	830 *UJ*	830 *UJ*	130 *J*	260 *J*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	200 *J*	300 *J*	180 *J*	920 *U*	920 *UJ*	920 *UJ*
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	130 *J*	240 *J*	100 *J*	590 *U*	590 *U*	590 *U*
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	200 *J*	260 *J*	170 *J*	250 *J*	650 *U*	650 *U*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	450 *J*	790 *J*	250 *J*	750 *UJ*	750 *UJ*	750 *UJ*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	480 *J*	440 *J*	180 *J*	540 *J*	800 *UJ*	800 *UJ*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	220 *J*	200 *J*	61 *J*	230 *J*	590 *U*	590 *U*
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	63 *J*	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	620 *J*	640 *J*	150 *J*	680 *J*	650 *U*	650 *U*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	230 *J*	440 *J*	200 *J*	660 *U*	660 *U*	660 *U*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	680	240 *J*	170 *J*	250 *J*	580 *U*	580 *U*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	590 *U*	590 *U*	590 *U*	590 *U*	590 *U*	590 *U*
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	400 *J*	590 *J*	260 *J*	670 *U*	670 *UJ*	670 *UJ*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	290 *J*	470 *J*	220 *J*	830 *UJ*	830 *UJ*	830 *UJ*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	150 *J*	610 *U*	130 *J*	170 *J*	610 *U*	610 *U*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	170 *J*	600 *U*	140 *J*	260 *J*	600 *U*	600 *U*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	330 *J*	440 *J*	270 *J*	230 *J*	700 *UJ*	700 *UJ*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	180 *J*	340 *J*	140 *J*	870 *UJ*	870 *UJ*	870 *UJ*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	200 *J*	380 *J*	140 *J*	750 *UJ*	750 *UJ*	750 *UJ*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	200 *J*	400 *J*	150 *J*	820 *UJ*	820 *UJ*	820 *UJ*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	190 *J*	350 *J*	120 *J*	820 *UJ*	820 *UJ*	820 *UJ*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	110 *J*	970 *UJ*	970 *UJ*	160 *J*	970 *UJ*	970 *UJ*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	500 *U*	500 *U*	500 *U*	500 *UJ*	500 *U*	500 *U*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	550 *U*	550 *U*	550 *U*	550 *UJ*	550 *U*	550 *U*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	100 *J*	230 *J*	100 *J*	720 *UJ*	720 *UJ*	720 *UJ*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	920 *UJ*	920 *UJ*	920 *UJ*	110 *J*	920 *UJ*	920 *UJ*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	450 *U*	450 *U*	450 *U*	450 *UJ*	450 *U*	450 *U*
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	450 *U*	450 *U*	450 *U*	450 *UJ*	450 *U*	450 *U*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	720 *UJ*	86 *J*	720 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	110 *J*	200 *J*	95 *J*	560 *U*	560 *U*	560 *U*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	610 *U*	610 *U*	610 *U*	610 *U*	610 *U*	610 *U*
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	88 *J*	61 *J*	72 *J*	110 *J*	590 *U*	590 *U*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	79 *J*	67 *J*	550 *U*	81 *J*	550 *U*	550 *U*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	570 *U*	61 *J*	570 *U*	570 *U*	570 *U*	570 *U*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	590 *U*	590 *U*	590 *U*	590 *U*	590 *U*	590 *U*
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	170 *J*	130 *J*	140 *J*	210 *J*	610 *U*	610 *U*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	890 *UJ*	890 *UJ*	890 *UJ*	890 *UJ*	890 *UJ*	890 *UJ*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	280 *J*	300 *J*	220 *J*	290 *J*	800 *UJ*	800 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Benzo[a]pyrene (µg/kg dry)	Benzo[b]-fluoranthene (µg/kg dry)	Benzo[ghi] perylene (µg/kg dry)	Benzo[k]-fluoranthene (µg/kg dry)	Biphenyl (µg/kg dry)	bis[2-chloroethoxy]-methane (µg/kg dry)
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	260 *J*	310 *J*	2,300 *UJ*	330 *J*	2,300 *UJ*	2,300 *UJ*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	200 *J*	420 *J*	190 *J*	750 *UJ*	750 *UJ*	750 *UJ*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	200 *J*	400 *J*	180 *J*	890 *UJ*	890 *UJ*	890 *UJ*
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	270 *J*	380 *J*	210 *J*	220 *J*	800 *UJ*	800 *UJ*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	350 *J*	750 *UJ*	260 *J*	480 *J*	750 *UJ*	750 *UJ*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	190 *J*	270 *J*	150 *J*	150 *J*	730 *UJ*	730 *UJ*
SD01	Ruplnd	10/23/1997	SD01	0	0	0	180 *J*	440 *J*	110 *J*	520 *UJ*		520 *U*
SD02	Ruplnd	10/24/1997	SD02	0	0	0	160 *J*	330 *J*	64 *J*	470 *UJ*		470 *U*
SD03	upland	10/23/1997	SD03	0	0	0	120 *J*	280 *J*	110 *J*	580 *UJ*		580 *U*
SD04	upland	10/24/1997	SD04	0	0	0	600 *U*	600 *U*	600 *U*	600 *UJ*		600 *U*
SD05	upland	10/23/1997	SD05	0	0	0	630 *J*	910 *J*	320 *J*	400 *J*		1,000 *U*
SD06	upland	10/23/1997	SD06	0	0	0	180 *J*	520 *J*	250 *J*	1,700 *UJ*		1,700 *UJ*
SD07	upland	10/23/1997	SD07	0	0	0	10,000 *J*	25,000 *J*	10,000 *J*	5,000 *UJ*		5,000 *UJ*
SD08	upland	10/23/1997	SD08	0	0	0	7,700 *U*	7,700 *U*	7,700 *U*	7,700 *U*		7,700 *U*
SD09	upland	10/28/1997	SD09	0	0	0	260 *J*	670 *J*	330 *J*	820 *UJ*		820 *UJ*
SD10	upland	10/28/1997	SD10	0	0	0	280 *J*	1,000 *J*	1,300 *UJ*	1,300 *UJ*		1,300 *UJ*
SD11	upland	10/28/1997	SD11	0	0	0	500 *J*	1,400 *J*	1,600 *UJ*	1,600 *UJ*		1,600 *UJ*
SD12	upland	10/28/1997	SD12	0	0	0	92 *J*	340 *J*	130 *J*	1,100 *UJ*		1,100 *UJ*
SD13	upland	10/27/1997	SD13	0	0	0	760	1,500	190 *J*	460 *J*		520 *U*
SD14	upland	10/27/1997	SD14	0	0	0	440 *J*	680	620 *U*	240 *J*		620 *U*
SD15	upland	10/24/1997	SD15	0	0	0	380 *U*	380 *U*	380 *U*	380 *U*		380 *U*
SD16	upland	10/27/1997	SD16	0	0	0	1,000	2,600	370 *J*	730		550 *U*
SD17	upland	10/27/1997	SD17	0	0	0	270 *J*	610 *J*	91 *J*	650 *U*		650 *U*
SD18	upland	10/29/1997	SD18	0	0	0	49 *J*	140 *J*	600 *UJ*	600 *UJ*		600 *UJ*
SD19	upland	10/24/1997	SD19	0	0	0	400 *U*	400 *U*	400 *U*	400 *U*		400 *U*
SD20	upland	10/24/1997	SD20	A	0	0	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*		11,000 *UJ*
SD20	upland	10/24/1997	SD20	B	0	0	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*		11,000 *UJ*
SD21	Ruplnd	10/24/1997	SD21	0	0	0	370 *U*	370 *U*	370 *U*	370 *U*		370 *U*
SD22	upland	10/24/1997	SD22	0	0	0	16 *J*	48 *J*	53 *J*	400 *U*		400 *U*
SD23	upland	10/24/1997	SD23	0	0	0	380 *U*	380 *U*	380 *U*	380 *U*		380 *U*
SD24	river	10/27/1997	SD24	0	0	0	52 *J*	140 *J*	970 *UJ*	970 *UJ*		970 *UJ*
SD25	river	10/29/1997	SD25	0	0	0	110 *J*	200 *J*	1,000 *UJ*	1,000 *UJ*		1,000 *UJ*
SD26	marsh	10/29/1997	SD26	0	0	0	1,900 *UJ*	140 *J*	1,900 *UJ*	1,900 *UJ*		1,900 *UJ*
SD27	river	10/30/1997	SD27	0	0	0	170 *J*	430 *J*	1,300 *UJ*	1,300 *UJ*		1,300 *UJ*
SD28	upland	10/28/1997	SD28	0	0	0	58 *J*	190 *J*	940 *UJ*	940 *UJ*		940 *UJ*
SD29	upland	10/27/1997	SD29	0	0	0	480 *U*	480 *U*	480 *UJ*	480 *U*		480 *U*
SD30	upland	10/29/1997	SD30	0	0	0	51 *J*	110 *J*	480 *UJ*	480 *UJ*		480 *UJ*
SD31	river	10/30/1997	SD31	0	0	0	370 *J*	650 *J*	260 *J*	1,000 *UJ*		1,000 *UJ*
SD32	upland	10/28/1997	SD32	0	0	0	71 *J*	140 *J*	90 *J*	700 *UJ*		700 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Benzo[a]pyrene (µg/kg dry)	Benzo[b]-fluoranthene (µg/kg dry)	Benzo[ghi] perylene (µg/kg dry)	Benzo[k]-fluoranthene (µg/kg dry)	Biphenyl (µg/kg dry)	bis[2-chloroethoxy]-methane (µg/kg dry)
SD33	marsh	10/28/1997	SD33	0	0	0	130 *J*	350 *J*	160 *J*	850 *UJ*		850 *UJ*
SD34	upland	10/30/1997	SD34	0	0	0	580 *U*	580 *U*	580 *U*	580 *U*		580 *U*
SD35	marsh	10/30/1997	SD35	0	0	0	300 *J*	730 *J*	240 *J*	750 *UJ*		750 *UJ*
SD36	marsh	10/30/1997	SD36	0	0	0	480 *U*	480 *U*	480 *U*	480 *U*		480 *U*
SD37	marsh	10/30/1997	SD37	A	0	0	390 *U*	390 *U*	390 *U*	390 *U*		390 *U*
SD37	marsh	10/30/1997	SD37	B	0	0	400 *U*	100 *J*	400 *U*	400 *U*		400 *U*
SD38	river	6/24/1998	SD38	0	0	0	370 *J*	390 *J*	310 *J*	180 *J*		1,000 *UJ*
SD39	river	6/24/1998	SD39	A	0	0	4,300 *UJ*	530 *J*	4,300 *UJ*	4,300 *UJ*		4,300 *UJ*
SD39	river	6/24/1998	SD39	B	0	0	510 *J*	650 *J*	4,500 *UJ*	4,500 *UJ*		4,500 *UJ*
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	310 *J*	580 *J*	140 *J*	400 *J*	730 *UJ*	730 *UJ*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	160 *J*	220 *J*	610 *U*	190 *J*	610 *U*	610 *U*
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	260 *J*	340 *J*	620 *U*	360 *J*	620 *U*	620 *U*
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	110 *J*	160 *J*	620 *U*	120 *J*	66 *J*	620 *U*
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	150 *J*	370 *J*	830 *R*	290 *J*	290 *J*	830 *UJ*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	180 *J*	300 *J*	580 *U*	280 *J*	580 *U*	580 *U*
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	200 *J*	350 *J*	550 *U*	250 *J*	550 *U*	550 *U*
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	270 *J*	400 *J*	650 *U*	430 *J*	79 *J*	650 *U*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	400 *J*	930 *J*	1,100 *R*	610 *J*	2,200 *J*	1,100 *UJ*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	180 *J*	240 *J*	620 *U*	230 *J*	620 *U*	620 *U*
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	470 *J*	610 *J*	130 *J*	560 *J*	630 *U*	630 *U*
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	230 *J*	330 *J*	58 *J*	280 *J*	570 *U*	570 *U*
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	310 *J*	430 *J*	130 *J*	400 *J*	82 *J*	750 *UJ*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	59 *J*	77 *J*	570 *U*	60 *J*	570 *U*	570 *U*
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	190 *J*	230 *J*	560 *UJ*	160 *J*	560 *U*	560 *U*
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	92 *J*	120 *J*	600 *U*	100 *J*	600 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	90 *J*	120 *J*	580 *U*	90 *J*	580 *U*	580 *U*
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	140 *J*	150 *J*	600 *U*	140 *J*	600 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	61 *J*	65 *J*	570 *U*	58 *J*	570 *U*	570 *U*
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	120 *J*	150 *J*	710 *UJ*	150 *J*	710 *UJ*	710 *UJ*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	120 *J*	170 *J*	580 *U*	160 *J*	580 *U*	580 *U*
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	630 *U*	630 *U*	630 *U*	630 *U*	630 *U*	630 *U*
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	240 *J*	240 *J*	590 *U*	270 *J*	590 *U*	590 *U*
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	200 *J*	220 *J*	510 *U*	230 *J*	510 *U*	510 *U*
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	380 *J*	470 *J*	110 *J*	510 *J*	560 *U*	560 *U*
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	540 *U*	540 *U*	540 *U*	540 *U*	540 *U*	540 *U*
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	180 *J*	250 *J*	56 *J*	250 *J*	520 *U*	520 *U*
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	190 *J*	1,600 *UJ*	1,600 *UJ*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	280 *J*	290 *J*	640 *U*	290 *J*	640 *U*	640 *U*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Benzo[a]pyrene (µg/kg dry)	Benzo[b]-fluoranthene (µg/kg dry)	Benzo[ghi] perylene (µg/kg dry)	Benzo[k]-fluoranthene (µg/kg dry)	Biphenyl (µg/kg dry)	bis[2-chloroethoxy]-methane (µg/kg dry)
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	110 *J*	100 *J*	610 *U*	120 *J*	610 *U*	610 *U*
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	380 *J*	470 *J*	96 *J*	430 *J*	820 *UJ*	820 *UJ*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	2,100 *UJ*	2,100 *UJ*	2,100 *UJ*	2,100 *UJ*	2,100 *UJ*	2,100 *UJ*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	150 *J*	150 *J*	680 *UJ*	170 *J*	680 *UJ*	680 *UJ*
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	330 *J*	370 *J*	1,600 *UJ*	370 *J*	1,600 *UJ*	1,600 *UJ*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	730 *UJ*	730 *UJ*	730 *UJ*	730 *UJ*	730 *UJ*	730 *UJ*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	550 *U*	550 *U*	550 *U*	550 *U*	550 *U*	550 *U*
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	580 *U*	580 *U*	580 *UJ*	580 *U*	580 *U*	580 *U*
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	980 *UJ*	980 *UJ*	980 *UJ*	980 *UJ*	980 *UJ*	980 *UJ*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	52 *J*	69 *J*	410 *U*	46 *J*	410 *U*	410 *U*
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	150 *J*	180 *J*	670 *UJ*	170 *J*	670 *UJ*	670 *UJ*
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	240 *J*	280 *J*	87 *J*	280 *J*	590 *U*	590 *U*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	120 *J*	170 *J*	560 *UJ*	160 *J*	110 *J*	560 *U*
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	110 *J*	150 *J*	560 *U*	110 *J*	560 *U*	560 *U*
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	120 *J*	170 *J*	580 *U*	140 *J*	580 *U*	580 *U*
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	87 *J*	120 *J*	590 *U*	110 *J*	590 *U*	590 *U*
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	300 *J*	410 *J*	120 *J*	360 *J*	560 *UJ*	560 *UJ*

Note:
PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	bis[2-chloroethyl]-ether (µg/kg dry)	Bis[2-chloroisopropyl] ether (µg/kg dry)	bis[2-Ethylhexyl] phthalate (µg/kg dry)	Butylbenzyl phthalate (µg/kg dry)	Caprolactam (µg/kg dry)	Carbazole (µg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	600 *U*	600 *UJ*	670 *J*	600 *UJ*	600 *U*	600 *U*
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	660 *U*	660 *UJ*	660 *UJ*	660 *UJ*	660 *U*	660 *U*
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	670 *UJ*	670 *UJ*	4,200 *J*	670 *UJ*	670 *UJ*	670 *UJ*
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	420 *U*	420 *UJ*	300 *J*	420 *U*	420 *U*	420 *U*
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	500 *U*	500 *UJ*	2,900	500 *U*	500 *U*	500 *U*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	440 *U*	440 *U*	240 *J*	440 *U*	440 *U*	440 *U*
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	530 *U*	530 *UJ*	1,900	530 *U*	530 *U*	530 *U*
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	740 *UJ*	740 *UJ*	4,700 *J*	740 *UJ*	740 *UJ*	740 *UJ*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	750 *UJ*	750 *UJ*	3,800 *J*	750 *UJ*	750 *UJ*	750 *UJ*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	700 *UJ*	700 *UJ*	700 *UJ*	700 *UJ*	700 *UJ*	110 *J*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	800 *UJ*	800 *UJ*	5,300 *J*	800 *UJ*	800 *UJ*	800 *UJ*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	780 *UJ*	780 *UJ*	1,100 *J*	780 *UJ*	780 *UJ*	780 *UJ*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	760 *UJ*	760 *UJ*	2,100 *J*	760 *UJ*	760 *UJ*	760 *UJ*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	720 *UJ*	720 *UJ*	910 *J*	720 *UJ*	720 *UJ*	720 *UJ*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	780 *UJ*	780 *UJ*	1,300 *J*	780 *UJ*	780 *UJ*	780 *UJ*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	590 *U*	590 *U*	4,500 *J*	590 *UJ*	590 *U*	590 *U*
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	700 *UJ*	700 *UJ*	5,600 *J*	700 *UJ*	700 *UJ*	700 *UJ*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	640 *UJ*	640 *UJ*	190 *J*	640 *UJ*	640 *UJ*	640 *UJ*
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	700 *UJ*	700 *UJ*	11,000 *J*	700 *UJ*	700 *UJ*	700 *UJ*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	870 *UJ*	870 *UJ*	4,000 *J*	870 *UJ*	870 *UJ*	870 *UJ*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	790 *UJ*	790 *UJ*	2,100 *J*	790 *UJ*	790 *UJ*	790 *UJ*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	720 *UJ*	720 *UJ*	4,100 *J*	720 *R*	720 *UJ*	720 *UJ*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	970 *UJ*	970 *UJ*	7,300 *J*	970 *UJ*	970 *UJ*	970 *UJ*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	1,200 *UJ*	1,200 *UJ*	13,000 *J*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	700 *UJ*	700 *UJ*	150 *J*	700 *UJ*	700 *UJ*	700 *UJ*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	670 *UJ*	670 *UJ*	340 *J*	670 *UJ*	670 *UJ*	670 *UJ*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	780 *UJ*	780 *UJ*	730 *J*	780 *UJ*	780 *UJ*	780 *UJ*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	1,300 *UJ*	1,300 *UJ*	10,000 *J*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	700 *UJ*	700 *UJ*	350 *J*	92 *J*	700 *UJ*	700 *UJ*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	680 *UJ*	680 *UJ*	420 *J*	680 *UJ*	680 *UJ*	680 *UJ*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	790 *UJ*	790 *UJ*	18,000 *J*	790 *UJ*	790 *UJ*	790 *UJ*
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6	830 *UJ*	830 *UJ*	11,000 *J*	830 *UJ*	830 *UJ*	830 *UJ*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	770 *UJ*	770 *UJ*	4,200 *J*	770 *UJ*	770 *UJ*	770 *UJ*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	780 *UJ*	780 *UJ*	2,600 *J*	780 *UJ*	780 *UJ*	780 *UJ*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	830 *UJ*	830 *UJ*	4,200 *J*	830 *UJ*	830 *UJ*	830 *UJ*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	860 *UJ*	860 *UJ*	300 *J*	860 *UJ*	860 *UJ*	860 *UJ*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	720 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	670 *UJ*	670 *UJ*	79 *J*	670 *UJ*	670 *UJ*	670 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	bis[2-chloroethyl]-ether (µg/kg dry)	Bis[2-chloroisopropyl] ether (µg/kg dry)	bis[2-Ethylhexyl] phthalate (µg/kg dry)	Butylbenzyl phthalate (µg/kg dry)	Caprolactam (µg/kg dry)	Carbazole (µg/kg dry)
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	770 *UJ*	770 *UJ*	830 *UJ*	830 *UJ*	140 *J*	830 *UJ*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	920 *UJ*	920 *UJ*	900 *J*	920 *UJ*	920 *UJ*	920 *UJ*
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	590 *U*	590 *U*	220 *J*	590 *U*	590 *U*	590 *U*
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	650 *U*	650 *U*	540 *J*	650 *U*	650 *U*	650 *U*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	750 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	800 *UJ*	800 *UJ*	260 *J*	800 *UJ*	800 *UJ*	800 *UJ*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	590 *U*	590 *UJ*	590 *U*	590 *U*	590 *U*	590 *U*
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	600 *U*	600 *UJ*	600 *U*	600 *U*	600 *U*	600 *U*
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	650 *U*	650 *UJ*	650 *UJ*	650 *UJ*	650 *U*	650 *U*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	660 *UJ*	660 *UJ*	280 *J*	660 *U*	660 *U*	660 *U*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	580 *U*	580 *U*	4,200 *J*	580 *U*	580 *U*	580 *U*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	590 *U*	590 *U*	2,600 *J*	590 *U*	590 *U*	590 *U*
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	670 *UJ*	670 *UJ*	180 *J*	670 *UJ*	670 *UJ*	670 *UJ*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	830 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	610 *U*	610 *U*	610 *U*	610 *U*	610 *UJ*	610 *U*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	600 *U*	600 *U*	140 *J*	600 *U*	600 *U*	600 *UJ*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	700 *UJ*	700 *UJ*	700 *UJ*	700 *UJ*	700 *UJ*	700 *UJ*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	870 *UJ*	870 *UJ*	16,000 *J*	870 *UJ*	870 *UJ*	870 *UJ*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	750 *UJ*	750 *UJ*	27,000 *J*	750 *UJ*	750 *UJ*	750 *UJ*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	820 *UJ*	820 *UJ*	34,000 *J*	820 *UJ*	200 *J*	820 *UJ*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	820 *UJ*	820 *UJ*	20,000 *J*	820 *UJ*	820 *UJ*	820 *UJ*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	970 *UJ*	970 *UJ*	970 *UJ*	970 *UJ*	970 *UJ*	970 *UJ*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	500 *U*	500 *U*	500 *U*	500 *U*	500 *UJ*	500 *U*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	550 *U*	550 *U*	550 *U*	550 *U*	550 *UJ*	550 *U*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	720 *UJ*	720 *UJ*	970 *J*	720 *UJ*	720 *UJ*	720 *UJ*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	920 *UJ*	920 *UJ*	830 *J*	920 *UJ*	920 *UJ*	920 *UJ*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	450 *U*	450 *U*	450 *U*	450 *U*	450 *UJ*	450 *U*
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	450 *U*	450 *U*	450 *U*	450 *U*	450 *UJ*	450 *U*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	720 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	560 *UJ*	560 *UJ*	2,600 *J*	560 *U*	560 *U*	560 *U*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	610 *UJ*	610 *UJ*	230 *J*	610 *U*	610 *U*	610 *U*
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	620 *U*	620 *U*	67 *J*	620 *U*	620 *U*	620 *U*
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	590 *U*	590 *U*	1,400 *J*	590 *U*	590 *U*	590 *U*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	550 *U*	550 *U*	220 *J*	550 *U*	550 *U*	550 *U*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	570 *U*	570 *U*	8,600	570 *U*	570 *U*	570 *U*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	590 *U*	590 *U*	170 *J*	590 *U*	590 *U*	590 *U*
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	610 *U*	610 *U*	1,100 *J*	610 *U*	610 *U*	610 *U*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	890 *UJ*	890 *UJ*	1,600 *J*	890 *UJ*	890 *UJ*	890 *UJ*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	800 *UJ*	800 *UJ*	3,400 *J*	800 *UJ*	800 *UJ*	800 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	bis[2-chloroethyl]-ether (µg/kg dry)	Bis[2-chloroisopropyl] ether (µg/kg dry)	bis[2-Ethylhexyl] phthalate (µg/kg dry)	Butylbenzyl phthalate (µg/kg dry)	Caprolactam (µg/kg dry)	Carbazole (µg/kg dry)
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	2,300 *UJ*	2,300 *UJ*	43,000 *J*	2,300 *UJ*	2,300 *UJ*	2,300 *UJ*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	750 *UJ*	750 *UJ*	180 *J*	750 *UJ*	750 *UJ*	750 *UJ*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	890 *UJ*	890 *UJ*	550 *J*	890 *UJ*	890 *UJ*	890 *UJ*
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	800 *UJ*	800 *UJ*	4,100 *J*	800 *UJ*	800 *UJ*	800 *UJ*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	750 *UJ*	750 *UJ*	670 *J*	750 *UJ*	750 *UJ*	750 *UJ*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	730 *UJ*	730 *UJ*	1,200 *J*	730 *UJ*	730 *UJ*	730 *UJ*
SD01	Ruplnd	10/23/1997	SD01	0	0	0	520 *U*	520 *U*	520 *U*	520 *U*		520 *U*
SD02	Ruplnd	10/24/1997	SD02	0	0	0	470 *U*	470 *U*	120 *J*	470 *U*		470 *U*
SD03	upland	10/23/1997	SD03	0	0	0	580 *U*	580 *U*	430 *J*	580 *U*		580 *U*
SD04	upland	10/24/1997	SD04	0	0	0	600 *U*	600 *U*	120 *J*	600 *U*		600 *U*
SD05	upland	10/23/1997	SD05	0	0	0	1,000 *U*	1,000 *U*	1,600	1,000 *U*		390 *J*
SD06	upland	10/23/1997	SD06	0	0	0	1,700 *UJ*	1,700 *UJ*	770 *J*	1,700 *UJ*		1,700 *UJ*
SD07	upland	10/23/1997	SD07	0	0	0	5,000 *UJ*	5,000 *UJ*	230,000 *J*	1,800 *J*		1,600 *J*
SD08	upland	10/23/1997	SD08	0	0	0	7,700 *U*	7,700 *U*	20,000	7,700 *U*		7,700 *U*
SD09	upland	10/28/1997	SD09	0	0	0	820 *UJ*	820 *UJ*	4,000 *J*	820 *UJ*		820 *UJ*
SD10	upland	10/28/1997	SD10	0	0	0	1,300 *UJ*	1,300 *UJ*	4,700 *J*	1,300 *UJ*		1,300 *UJ*
SD11	upland	10/28/1997	SD11	0	0	0	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*		1,600 *UJ*
SD12	upland	10/28/1997	SD12	0	0	0	1,100 *UJ*	1,100 *UJ*	3,400 *J*	1,100 *UJ*		1,100 *UJ*
SD13	upland	10/27/1997	SD13	0	0	0	520 *U*	520 *U*	560	170 *J*		520 *U*
SD14	upland	10/27/1997	SD14	0	0	0	620 *U*	620 *U*	77 *J*	620 *U*		620 *U*
SD15	upland	10/24/1997	SD15	0	0	0	380 *U*	380 *U*	350 *J*	380 *U*		380 *U*
SD16	upland	10/27/1997	SD16	0	0	0	550 *U*	550 *U*	2,900	96 *J*		64 *J*
SD17	upland	10/27/1997	SD17	0	0	0	650 *U*	650 *U*	360 *J*	650 *U*		650 *U*
SD18	upland	10/29/1997	SD18	0	0	0	600 *UJ*	600 *UJ*	460 *J*	600 *UJ*		600 *UJ*
SD19	upland	10/24/1997	SD19	0	0	0	400 *U*	400 *U*	44 *J*	400 *U*		400 *U*
SD20	upland	10/24/1997	SD20	A	0	0	11,000 *UJ*	11,000 *UJ*	32,000 *J*	11,000 *UJ*		11,000 *UJ*
SD20	upland	10/24/1997	SD20	B	0	0	11,000 *UJ*	11,000 *UJ*	28,000 *J*	11,000 *UJ*		11,000 *UJ*
SD21	Ruplnd	10/24/1997	SD21	0	0	0	370 *U*	370 *U*	240 *J*	370 *U*		370 *U*
SD22	upland	10/24/1997	SD22	0	0	0	400 *U*	400 *U*	650	400 *U*		400 *U*
SD23	upland	10/24/1997	SD23	0	0	0	380 *U*	380 *U*	210 *J*	380 *U*		380 *U*
SD24	river	10/27/1997	SD24	0	0	0	970 *UJ*	970 *UJ*	680 *J*	970 *UJ*		970 *UJ*
SD25	river	10/29/1997	SD25	0	0	0	1,000 *UJ*	1,000 *UJ*	1,200 *J*	1,000 *UJ*		1,000 *UJ*
SD26	marsh	10/29/1997	SD26	0	0	0	1,900 *UJ*	1,900 *UJ*	380 *J*	1,900 *UJ*		1,900 *UJ*
SD27	river	10/30/1997	SD27	0	0	0	1,300 *UJ*	1,300 *UJ*	13,000 *J*	1,300 *UJ*		1,300 *UJ*
SD28	upland	10/28/1997	SD28	0	0	0	940 *UJ*	940 *UJ*	110 *J*	940 *UJ*		940 *UJ*
SD29	upland	10/27/1997	SD29	0	0	0	480 *U*	480 *U*	81 *J*	480 *U*		480 *U*
SD30	upland	10/29/1997	SD30	0	0	0	480 *UJ*	480 *UJ*	110 *J*	480 *UJ*		480 *UJ*
SD31	river	10/30/1997	SD31	0	0	0	1,000 *UJ*	1,000 *UJ*	2,000 *J*	1,000 *UJ*		1,000 *UJ*
SD32	upland	10/28/1997	SD32	0	0	0	700 *UJ*	700 *UJ*	250 *J*	700 *UJ*		700 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	bis[2-chloroethyl]-ether (µg/kg dry)	Bis[2-chloroisopropyl] ether (µg/kg dry)	bis[2-Ethylhexyl] phthalate (µg/kg dry)	Butylbenzyl phthalate (µg/kg dry)	Caprolactam (µg/kg dry)	Carbazole (µg/kg dry)
SD33	marsh	10/28/1997	SD33	0	0	0	850 *UJ*	850 *UJ*	150 *J*	850 *UJ*		850 *UJ*
SD34	upland	10/30/1997	SD34	0	0	0	580 *U*	580 *UJ*	180 *J*	580 *U*		580 *UJ*
SD35	marsh	10/30/1997	SD35	0	0	0	750 *UJ*	750 *UJ*	380 *J*	750 *UJ*		750 *UJ*
SD36	marsh	10/30/1997	SD36	0	0	0	480 *U*	480 *UJ*	1,200	480 *U*		480 *UJ*
SD37	marsh	10/30/1997	SD37	A	0	0	390 *U*	390 *UJ*	170 *J*	390 *U*		390 *UJ*
SD37	marsh	10/30/1997	SD37	B	0	0	400 *U*	400 *UJ*	180 *J*	400 *U*		400 *U*
SD38	river	6/24/1998	SD38	0	0	0	1,000 *UJ*	1,000 *UJ*	2,600 *UJ*	1,000 *UJ*		1,000 *UJ*
SD39	river	6/24/1998	SD39	A	0	0	4,300 *UJ*	0 *R*	16,000 *UJ*	4,300 *UJ*		4,300 *UJ*
SD39	river	6/24/1998	SD39	B	0	0	4,500 *UJ*	0 *R*	4,500 *UJ*	4,500 *UJ*		4,500 *UJ*
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	730 *UJ*	730 *UJ*	52,000 *J*	730 *R*	730 *UJ*	730 *UJ*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	610 *U*	610 *U*	110 *J*	610 *U*	610 *U*	610 *U*
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	620 *U*	620 *U*	1,100	620 *U*	620 *U*	620 *U*
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	830 *UJ*	830 *UJ*	15,000 *J*	830 *UJ*	830 *UJ*	830 *UJ*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	580 *U*	580 *U*	210 *J*	580 *U*	580 *U*	580 *U*
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	550 *U*	550 *U*	550 *U*	550 *U*	550 *U*	550 *U*
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	650 *U*	650 *U*	1,400	650 *U*	650 *U*	650 *U*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	1,100 *UJ*	1,100 *UJ*	21,000 *J*	1,100 *UJ*	1,100 *UJ*	1,100 *UJ*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	620 *U*	620 *U*	63 *J*	620 *U*	620 *U*	620 *U*
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	85 *J*	630 *U*	300 *J*	630 *U*	630 *U*	630 *U*
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	570 *U*	570 *U*	210 *J*	570 *U*	570 *U*	570 *U*
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	750 *UJ*	750 *UJ*	210 *J*	750 *UJ*	750 *UJ*	750 *UJ*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	570 *U*	570 *U*	570 *U*	570 *U*	570 *U*	570 *U*
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	560 *U*	560 *U*	560 *U*	560 *U*	560 *U*	560 *U*
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	600 *U*	600 *U*	78 *J*	600 *U*	600 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	580 *U*	580 *U*	580 *U*	580 *U*	580 *U*	580 *U*
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	570 *U*	570 *U*	570 *U*	570 *U*	570 *U*	570 *U*
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	710 *UJ*	710 *UJ*	100 *J*	710 *UJ*	710 *UJ*	710 *UJ*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	580 *U*	580 *U*	580 *U*	580 *U*	580 *U*	580 *U*
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	630 *U*	630 *U*	630 *U*	630 *U*	630 *U*	630 *U*
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	590 *U*	590 *U*	590 *U*	590 *U*	590 *UJ*	590 *U*
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	510 *U*	510 *U*	82 *J*	510 *U*	510 *U*	510 *U*
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	560 *U*	560 *U*	560 *UJ*	75 *J*	560 *U*	560 *U*
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	540 *U*	540 *U*	540 *U*	540 *U*	540 *U*	540 *U*
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	520 *U*	520 *U*	520 *U*	520 *U*	520 *U*	520 *U*
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	1,600 *UJ*	1,600 *UJ*	450 *J*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	640 *U*	640 *U*	640 *U*	640 *U*	640 *U*	640 *U*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	bis[2-chloroethyl]-ether (µg/kg dry)	Bis[2-chloroisopropyl] ether (µg/kg dry)	bis[2-Ethylhexyl] phthalate (µg/kg dry)	Butylbenzyl phthalate (µg/kg dry)	Caprolactam (µg/kg dry)	Carbazole (µg/kg dry)
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	610 *U*	610 *U*	610 *U*	610 *U*	610 *U*	610 *U*
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	820 *UJ*	820 *UJ*	100 *J*	820 *UJ*	820 *UJ*	820 *UJ*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	2,100 *UJ*	2,100 *UJ*	1,000 *J*	350 *J*	2,100 *UJ*	2,100 *UJ*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	680 *UJ*	680 *UJ*	680 *UJ*	680 *UJ*	680 *UJ*	680 *UJ*
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	1,600 *UJ*	1,600 *UJ*	2,700 *J*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	730 *UJ*	730 *UJ*	480 *J*	730 *UJ*	730 *UJ*	730 *UJ*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	550 *U*	550 *U*	75 *J*	550 *U*	550 *U*	550 *U*
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	580 *U*	580 *U*	100 *J*	580 *U*	580 *U*	580 *U*
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	980 *UJ*	980 *UJ*	1,600 *J*	980 *UJ*	980 *UJ*	980 *UJ*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	410 *U*	410 *UJ*	1,500	410 *U*	410 *U*	410 *U*
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	670 *UJ*	670 *UJ*	410 *J*	670 *UJ*	670 *UJ*	670 *UJ*
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	590 *U*	590 *U*	120 *J*	590 *U*	590 *U*	590 *U*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	560 *U*	560 *UJ*	11,000	560 *UJ*	560 *U*	560 *U*
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	560 *U*	560 *U*	110 *J*	560 *U*	560 *U*	560 *U*
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	580 *U*	580 *U*	580 *U*	580 *U*	580 *U*	580 *U*
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	590 *U*	590 *U*	590 *U*	590 *U*	590 *U*	590 *U*
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	560 *UJ*	560 *UJ*	560 *UJ*	230 *J*	560 *UJ*	560 *UJ*

Note: PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Chrysene (µg/kg dry)	Dibenz[a,h]-anthracene (µg/kg dry)	Dibenzofuran (µg/kg dry)	Diethyl phthalate (µg/kg dry)	Dimethyl phthalate (µg/kg dry)	Di-n-butyl phthalate (µg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	150 *J*	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	150 *J*	660 *U*	660 *U*	660 *U*	660 *U*	660 *U*
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	150 *J*	620 *UJ*	620 *U*	620 *U*	620 *U*	620 *U*
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	190 *J*	670 *UJ*	670 *UJ*	670 *UJ*	670 *UJ*	670 *UJ*
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	420 *U*	420 *U*	420 *U*	420 *U*	420 *U*	420 *U*
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	68 *J*	500 *U*	500 *U*	500 *U*	500 *U*	500 *U*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	55 *J*	440 *U*	440 *U*	440 *U*	440 *U*	440 *U*
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	130 *J*	530 *U*	530 *U*	530 *U*	530 *U*	530 *U*
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	480 *J*	80 *J*	740 *UJ*	740 *UJ*	740 *UJ*	740 *UJ*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	620 *J*	750 *R*	81 *J*	750 *UJ*	750 *UJ*	160 *J*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	750 *J*	79 *J*	170 *J*	700 *UJ*	700 *UJ*	160 *J*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	1,300 *J*	89 *J*	800 *UJ*	800 *UJ*	800 *UJ*	170 *J*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	270 *J*	780 *UJ*	780 *UJ*	780 *UJ*	780 *UJ*	780 *UJ*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	550 *J*	98 *J*	760 *UJ*	760 *UJ*	760 *UJ*	760 *UJ*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	420 *J*	89 *J*	720 *UJ*	720 *UJ*	720 *UJ*	120 *J*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	350 *J*	780 *UJ*	780 *UJ*	780 *UJ*	780 *UJ*	780 *UJ*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	610 *J*	590 *R*	590 *U*	590 *U*	590 *U*	590 *U*
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	930 *J*	80 *J*	80 *J*	700 *UJ*	700 *UJ*	160 *J*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	460 *J*	640 *UJ*	640 *UJ*	640 *UJ*	640 *UJ*	98 *J*
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	1,200 *J*	71 *J*	120 *J*	700 *UJ*	700 *UJ*	92 *J*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	650 *J*	870 *UJ*	870 *UJ*	870 *UJ*	870 *UJ*	870 *UJ*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	870 *J*	80 *J*	790 *UJ*	790 *UJ*	790 *UJ*	84 *J*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	720 *R*	120 *J*	90 *J*	720 *UJ*	720 *UJ*	140 *J*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	1,400 *J*	160 *J*	970 *UJ*	970 *UJ*	970 *UJ*	150 *J*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	400 *J*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	210 *J*	700 *UJ*	700 *UJ*	700 *UJ*	700 *UJ*	700 *UJ*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	460 *J*	98 *J*	81 *J*	670 *UJ*	670 *UJ*	670 *UJ*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	260 *J*	780 *UJ*	780 *UJ*	780 *UJ*	780 *UJ*	780 *UJ*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	200 *J*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	530 *J*	180 *J*	700 *UJ*	700 *UJ*	700 *UJ*	71 *J*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	380 *J*	91 *J*	680 *UJ*	680 *UJ*	680 *UJ*	680 *UJ*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	150 *J*	790 *UJ*	790 *UJ*	790 *UJ*	790 *UJ*	790 *UJ*
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6	250 *J*	86 *J*	830 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	480 *J*	84 *J*	770 *UJ*	770 *UJ*	770 *UJ*	770 *UJ*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	180 *J*	780 *UJ*	780 *UJ*	780 *UJ*	780 *UJ*	780 *UJ*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	260 *J*	830 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	120 *J*	860 *UJ*	860 *UJ*	860 *UJ*	860 *UJ*	860 *UJ*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	570 *J*	150 *J*	720 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	450 *J*	130 *J*	670 *UJ*	670 *UJ*	670 *UJ*	670 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Chrysene (µg/kg dry)	Dibenz[a,h]-anthracene (µg/kg dry)	Dibenzofuran (µg/kg dry)	Diethyl phthalate (µg/kg dry)	Dimethyl phthalate (µg/kg dry)	Di-n-butyl phthalate (µg/kg dry)
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	830 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	220 *J*	920 *UJ*	920 *UJ*	920 *UJ*	920 *UJ*	920 *UJ*
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	170 *J*	590 *U*	590 *U*	590 *U*	590 *U*	590 *U*
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	250 *J*	66 *J*	650 *U*	650 *U*	650 *U*	650 *U*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	510 *J*	120 *J*	750 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	410 *J*	93 *J*	800 *UJ*	800 *UJ*	800 *UJ*	800 *UJ*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	250 *J*	590 *U*	590 *U*	590 *U*	590 *U*	590 *U*
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	64 *J*	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	670 *J*	110 *J*	650 *U*	650 *U*	650 *U*	650 *U*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	220 *J*	75 *J*	660 *U*	660 *U*	660 *U*	660 *U*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	240 *J*	72 *J*	580 *U*	580 *U*	580 *U*	580 *U*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	590 *U*	590 *U*	590 *U*	590 *U*	590 *U*	590 *U*
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	390 *J*	130 *J*	670 *UJ*	670 *UJ*	670 *UJ*	670 *UJ*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	230 *J*	830 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	160 *J*	610 *U*	610 *U*	610 *U*	610 *U*	610 *U*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	150 *J*	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	260 *J*	110 *J*	700 *UJ*	700 *UJ*	700 *UJ*	700 *UJ*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	200 *J*	870 *UJ*	870 *UJ*	870 *UJ*	870 *UJ*	870 *UJ*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	260 *J*	750 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	270 *J*	820 *UJ*	820 *UJ*	820 *UJ*	820 *UJ*	820 *UJ*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	230 *J*	820 *UJ*	820 *UJ*	820 *UJ*	820 *UJ*	820 *UJ*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	130 *J*	970 *UJ*	970 *UJ*	970 *UJ*	970 *UJ*	970 *UJ*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	500 *U*	500 *U*	500 *U*	500 *U*	500 *U*	500 *U*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	550 *U*	550 *U*	550 *U*	550 *U*	550 *U*	550 *U*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	120 *J*	720 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	920 *UJ*	920 *UJ*	920 *UJ*	920 *UJ*	920 *UJ*	920 *UJ*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	450 *U*	450 *U*	450 *U*	450 *U*	450 *U*	450 *U*
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	450 *U*	450 *U*	450 *U*	450 *U*	450 *U*	450 *U*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	88 *J*	720 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	100 *J*	560 *U*	560 *U*	560 *U*	560 *U*	560 *U*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	610 *U*	610 *U*	610 *U*	610 *U*	610 *U*	610 *U*
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	81 *J*	590 *U*	590 *U*	590 *U*	590 *U*	590 *U*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	95 *J*	550 *U*	550 *U*	550 *U*	550 *U*	550 *U*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	570 *U*	570 *U*	570 *U*	570 *U*	570 *U*	570 *U*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	590 *U*	590 *U*	590 *U*	590 *U*	590 *U*	590 *U*
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	150 *J*	64 *J*	610 *U*	610 *U*	610 *U*	610 *U*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	890 *UJ*	890 *UJ*	890 *UJ*	890 *UJ*	890 *UJ*	890 *UJ*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	310 *J*	800 *UJ*	800 *UJ*	800 *UJ*	800 *UJ*	800 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Chrysene (µg/kg dry)	Dibenz[a,h]-anthracene (µg/kg dry)	Dibenzofuran (µg/kg dry)	Diethyl phthalate (µg/kg dry)	Dimethyl phthalate (µg/kg dry)	Di-n-butyl phthalate (µg/kg dry)
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	330 *J*	2,300 *UJ*	2,300 *UJ*	2,300 *UJ*	2,300 *UJ*	2,300 *UJ*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	250 *J*	82 *J*	750 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	200 *J*	890 *UJ*	890 *UJ*	890 *UJ*	890 *UJ*	890 *UJ*
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	350 *J*	800 *UJ*	800 *UJ*	800 *UJ*	800 *UJ*	800 *UJ*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	550 *J*	98 *J*	750 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	240 *J*	730 *UJ*	730 *UJ*	730 *UJ*	730 *UJ*	730 *UJ*
SD01	Ruplnd	10/23/1997	SD01	0	0	0	250 *J*	520 *U*	520 *U*	520 *U*	520 *U*	520 *U*
SD02	Ruplnd	10/24/1997	SD02	0	0	0	250 *J*	470 *U*	470 *U*	470 *U*	470 *U*	470 *U*
SD03	upland	10/23/1997	SD03	0	0	0	180 *J*	580 *U*	580 *U*	580 *U*	580 *U*	580 *U*
SD04	upland	10/24/1997	SD04	0	0	0	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*
SD05	upland	10/23/1997	SD05	0	0	0	1,000 *U*	130 *J*	680 *J*	1,000 *U*	1,000 *U*	1,000 *U*
SD06	upland	10/23/1997	SD06	0	0	0	220 *J*	1,700 *UJ*	1,700 *UJ*	1,700 *UJ*	1,700 *UJ*	1,700 *UJ*
SD07	upland	10/23/1997	SD07	0	0	0	14,000 *J*	2,200 *J*	1,500 *J*	5,000 *UJ*	5,000 *UJ*	5,000 *UJ*
SD08	upland	10/23/1997	SD08	0	0	0	7,700 *U*	7,700 *U*	7,700 *U*	7,700 *U*	7,700 *U*	4,200 *J*
SD09	upland	10/28/1997	SD09	0	0	0	290 *J*	820 *UJ*	820 *UJ*	820 *UJ*	820 *UJ*	820 *UJ*
SD10	upland	10/28/1997	SD10	0	0	0	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*
SD11	upland	10/28/1997	SD11	0	0	0	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	600 *J*
SD12	upland	10/28/1997	SD12	0	0	0	1,100 *UJ*	1,100 *UJ*	1,100 *UJ*	1,100 *UJ*	1,100 *UJ*	1,100 *UJ*
SD13	upland	10/27/1997	SD13	0	0	0	730	99 *J*	520 *U*	520 *U*	520 *U*	520 *U*
SD14	upland	10/27/1997	SD14	0	0	0	380 *J*	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*
SD15	upland	10/24/1997	SD15	0	0	0	380 *U*	380 *U*	380 *U*	380 *U*	380 *U*	380 *U*
SD16	upland	10/27/1997	SD16	0	0	0	1,100	130 *J*	550 *U*	550 *U*	550 *U*	550 *U*
SD17	upland	10/27/1997	SD17	0	0	0	280 *J*	650 *U*	650 *U*	650 *U*	650 *U*	650 *U*
SD18	upland	10/29/1997	SD18	0	0	0	62 *J*	600 *UJ*	600 *UJ*	600 *UJ*	600 *UJ*	600 *UJ*
SD19	upland	10/24/1997	SD19	0	0	0	400 *U*	400 *U*	400 *U*	400 *U*	400 *U*	400 *U*
SD20	upland	10/24/1997	SD20	A	0	0	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*
SD20	upland	10/24/1997	SD20	B	0	0	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*
SD21	Ruplnd	10/24/1997	SD21	0	0	0	370 *U*	370 *U*	370 *U*	370 *U*	370 *U*	370 *U*
SD22	upland	10/24/1997	SD22	0	0	0	52 *J*	400 *U*	400 *U*	400 *U*	400 *U*	400 *U*
SD23	upland	10/24/1997	SD23	0	0	0	380 *U*	380 *U*	380 *U*	380 *U*	380 *U*	380 *U*
SD24	river	10/27/1997	SD24	0	0	0	970 *UJ*	970 *UJ*	970 *UJ*	970 *UJ*	970 *UJ*	970 *UJ*
SD25	river	10/29/1997	SD25	0	0	0	150 *J*	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*
SD26	marsh	10/29/1997	SD26	0	0	0	1,900 *UJ*	1,900 *UJ*	1,900 *UJ*	1,900 *UJ*	1,900 *UJ*	1,900 *UJ*
SD27	river	10/30/1997	SD27	0	0	0	210 *J*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*
SD28	upland	10/28/1997	SD28	0	0	0	110 *J*	940 *UJ*	940 *UJ*	940 *UJ*	940 *UJ*	940 *UJ*
SD29	upland	10/27/1997	SD29	0	0	0	480 *U*	480 *U*	480 *U*	480 *U*	480 *U*	480 *U*
SD30	upland	10/29/1997	SD30	0	0	0	61 *J*	480 *UJ*	480 *UJ*	480 *UJ*	480 *UJ*	480 *UJ*
SD31	river	10/30/1997	SD31	0	0	0	380 *J*	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*
SD32	upland	10/28/1997	SD32	0	0	0	85 *J*	700 *UJ*	700 *UJ*	700 *UJ*	700 *UJ*	700 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Chrysene (µg/kg dry)	Dibenz[a,h]-anthracene (µg/kg dry)	Dibenzofuran (µg/kg dry)	Diethyl phthalate (µg/kg dry)	Dimethyl phthalate (µg/kg dry)	Di-n-butyl phthalate (µg/kg dry)
SD33	marsh	10/28/1997	SD33	0	0	0	160 *J*	850 *UJ*	850 *UJ*	850 *UJ*	850 *UJ*	850 *UJ*
SD34	upland	10/30/1997	SD34	0	0	0	580 *U*	580 *U*	580 *U*	580 *U*	580 *U*	580 *U*
SD35	marsh	10/30/1997	SD35	0	0	0	320 *J*	750 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*
SD36	marsh	10/30/1997	SD36	0	0	0	480 *U*	480 *U*	480 *U*	480 *U*	480 *U*	480 *U*
SD37	marsh	10/30/1997	SD37	A	0	0	390 *U*	390 *U*	390 *U*	390 *U*	390 *U*	390 *U*
SD37	marsh	10/30/1997	SD37	B	0	0	59 *J*	400 *U*	400 *U*	400 *U*	400 *U*	400 *U*
SD38	river	6/24/1998	SD38	0	0	0	300 *J*	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*
SD39	river	6/24/1998	SD39	A	0	0	4,300 *UJ*	4,300 *UJ*	4,300 *UJ*	4,300 *UJ*	4,300 *UJ*	4,300 *UJ*
SD39	river	6/24/1998	SD39	B	0	0	4,500 *UJ*	4,500 *UJ*	4,500 *UJ*	4,500 *UJ*	4,500 *UJ*	4,500 *UJ*
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	470 *J*	90 *J*	730 *UJ*	730 *UJ*	730 *UJ*	730 *UJ*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	190 *J*	610 *U*	610 *U*	610 *U*	610 *U*	610 *U*
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	300 *J*	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	130 *J*	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	260 *J*	830 *R*	830 *UJ*	830 *UJ*	830 *UJ*	190 *J*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	260 *J*	580 *U*	580 *U*	580 *U*	580 *U*	580 *U*
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	250 *J*	550 *U*	550 *U*	550 *U*	550 *U*	550 *U*
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	350 *J*	650 *U*	650 *U*	650 *U*	650 *U*	650 *U*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	220 *J*	1,100 *R*	1,100 *UJ*	1,100 *UJ*	1,100 *UJ*	1,300 *J*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	220 *J*	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	520 *J*	630 *UJ*	630 *U*	630 *U*	630 *U*	630 *U*
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	260 *J*	570 *U*	570 *U*	570 *U*	570 *U*	570 *U*
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	300 *J*	750 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	85 *J*	570 *U*	570 *U*	570 *U*	570 *U*	570 *U*
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	180 *J*	560 *UJ*	560 *U*	560 *U*	560 *U*	560 *U*
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	88 *J*	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	110 *J*	580 *U*	580 *U*	580 *U*	580 *U*	580 *U*
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	140 *J*	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	61 *J*	570 *U*	570 *U*	570 *U*	570 *U*	570 *U*
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	120 *J*	710 *UJ*	710 *UJ*	710 *UJ*	710 *UJ*	710 *UJ*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	140 *J*	580 *U*	580 *U*	580 *U*	580 *U*	580 *U*
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	630 *U*	630 *U*	630 *U*	630 *U*	630 *U*	630 *U*
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	360 *J*	110 *J*	590 *U*	590 *U*	590 *U*	590 *U*
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	280 *J*	510 *U*	510 *U*	510 *U*	510 *U*	56 *J*
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	500 *J*	110 *J*	560 *U*	560 *U*	560 *U*	560 *U*
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	540 *U*	540 *U*	540 *U*	540 *U*	540 *U*	540 *U*
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	260 *J*	520 *U*	520 *U*	520 *U*	520 *U*	520 *U*
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	180 *J*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	280 *J*	640 *U*	640 *U*	640 *U*	640 *U*	640 *U*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Chrysene (µg/kg dry)	Dibenz[a,h]-anthracene (µg/kg dry)	Dibenzofuran (µg/kg dry)	Diethyl phthalate (µg/kg dry)	Dimethyl phthalate (µg/kg dry)	Di-n-butyl phthalate (µg/kg dry)
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	110 *J*	610 *U*	610 *U*	610 *U*	610 *U*	610 *U*
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	330 *J*	98 *J*	820 *UJ*	820 *UJ*	820 *UJ*	820 *UJ*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	2,100 *UJ*	2,100 *UJ*	2,100 *UJ*	2,100 *UJ*	2,100 *UJ*	2,100 *UJ*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	120 *J*	680 *UJ*	680 *UJ*	680 *UJ*	680 *UJ*	680 *UJ*
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	380 *J*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	730 *UJ*	730 *UJ*	730 *UJ*	730 *UJ*	730 *UJ*	730 *UJ*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	550 *U*	550 *U*	550 *U*	550 *U*	550 *U*	550 *U*
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	580 *U*	580 *UJ*	580 *U*	580 *U*	580 *U*	580 *U*
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	980 *UJ*	980 *UJ*	980 *UJ*	980 *UJ*	980 *UJ*	980 *UJ*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	100 *J*	410 *U*	410 *U*	410 *U*	410 *U*	410 *U*
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	190 *J*	670 *UJ*	670 *UJ*	670 *UJ*	670 *UJ*	84 *J*
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	260 *J*	590 *UJ*	590 *U*	300 *J*	590 *U*	590 *U*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	510 *J*	560 *UJ*	140 *J*	560 *U*	560 *U*	560 *U*
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	95 *J*	560 *U*	560 *U*	560 *U*	560 *U*	560 *U*
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	140 *J*	580 *U*	580 *U*	580 *U*	580 *U*	580 *U*
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	110 *J*	590 *U*	590 *U*	590 *U*	590 *U*	590 *U*
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	360 *J*	69 *J*	560 *UJ*	560 *UJ*	560 *UJ*	560 *UJ*

Note: PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Di-n-octyl phthalate (µg/kg dry)	Fluoranthene (µg/kg dry)	Fluorene (µg/kg dry)	Hexachloro-benzene (µg/kg dry)	Hexachloro-butadiene (µg/kg dry)	Hexachloro-cyclo-pentadiene (µg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	600 *U*	250 *J*	600 *U*	600 *U*	600 *U*	600 *U*
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	660 *U*	200 *J*	660 *U*	660 *U*	660 *U*	660 *U*
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	620 *U*	170 *J*	620 *U*	620 *U*	620 *U*	620 *UJ*
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	670 *UJ*	330 *J*	670 *UJ*	670 *UJ*	670 *UJ*	670 *UJ*
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	420 *UJ*	420 *UJ*	420 *U*	420 *U*	420 *UJ*	420 *U*
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	500 *UJ*	120 *J*	500 *U*	500 *U*	500 *UJ*	500 *U*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	95 *J*	89 *J*	440 *U*	440 *U*	440 *U*	440 *UJ*
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	530 *UJ*	390 *J*	530 *U*	530 *U*	530 *UJ*	530 *U*
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	740 *UJ*	540 *J*	740 *UJ*	740 *UJ*	740 *UJ*	740 *UJ*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	750 *R*	790 *J*	170 *J*	750 *UJ*	750 *UJ*	750 *UJ*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	700 *R*	940 *J*	340 *J*	700 *UJ*	700 *UJ*	700 *UJ*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	800 *UJ*	1,600 *J*	160 *J*	800 *UJ*	800 *UJ*	800 *UJ*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	780 *UJ*	430 *J*	780 *UJ*	780 *UJ*	780 *UJ*	780 *UJ*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	760 *UJ*	800 *J*	160 *J*	760 *UJ*	760 *UJ*	760 *UJ*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	720 *UJ*	820 *J*	720 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	780 *UJ*	480 *J*	780 *UJ*	780 *UJ*	780 *UJ*	780 *UJ*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	590 *R*	700	590 *U*	590 *U*	590 *U*	590 *UJ*
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	700 *R*	950 *J*	200 *J*	700 *UJ*	700 *UJ*	700 *UJ*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	640 *UJ*	600 *J*	110 *J*	640 *UJ*	640 *UJ*	640 *UJ*
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	700 *R*	1,500 *J*	270 *J*	700 *UJ*	700 *UJ*	700 *UJ*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	870 *UJ*	1,100 *J*	870 *UJ*	870 *UJ*	870 *UJ*	870 *UJ*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	790 *UJ*	1,300 *J*	790 *UJ*	790 *UJ*	790 *UJ*	790 *UJ*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	720 *R*	950 *J*	150 *J*	720 *UJ*	720 *UJ*	720 *UJ*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	970 *R*	1,800 *J*	970 *UJ*	970 *UJ*	970 *UJ*	970 *UJ*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	1,200 *UJ*	940 *J*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	700 *UJ*	510 *J*	700 *UJ*	700 *UJ*	700 *UJ*	700 *UJ*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	670 *UJ*	1,000 *J*	210 *J*	670 *UJ*	670 *UJ*	670 *UJ*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	780 *UJ*	580 *J*	110 *J*	780 *UJ*	780 *UJ*	780 *UJ*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	1,300 *UJ*	400 *J*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	83 *J*	980 *J*	140 *J*	700 *UJ*	700 *UJ*	700 *UJ*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	680 *UJ*	480 *J*	70 *J*	680 *UJ*	680 *UJ*	680 *UJ*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	130 *J*	240 *J*	790 *UJ*	790 *UJ*	790 *UJ*	790 *UJ*
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6	100 *J*	370 *J*	830 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	770 *UJ*	580 *J*	770 *UJ*	770 *UJ*	770 *UJ*	770 *UJ*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	780 *UJ*	300 *J*	780 *UJ*	780 *UJ*	780 *UJ*	780 *UJ*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	120 *J*	700 *J*	830 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	860 *UJ*	210 *J*	860 *UJ*	860 *UJ*	860 *UJ*	860 *UJ*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	720 *UJ*	900 *J*	110 *J*	720 *UJ*	720 *UJ*	720 *UJ*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	670 *UJ*	780 *J*	670 *UJ*	670 *UJ*	670 *UJ*	670 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Di-n-octyl phthalate (µg/kg dry)	Fluoranthene (µg/kg dry)	Fluorene (µg/kg dry)	Hexachloro-benzene (µg/kg dry)	Hexachloro-butadiene (µg/kg dry)	Hexachloro-cyclo-pentadiene (µg/kg dry)
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	830 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*	160 *J*	230 *J*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	920 *UJ*	370 *J*	920 *UJ*	920 *UJ*	920 *UJ*	920 *UJ*
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	590 *UJ*	320 *J*	590 *U*	590 *U*	590 *U*	590 *U*
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	650 *UJ*	490 *J*	650 *U*	650 *U*	650 *U*	650 *U*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	750 *UJ*	1,000 *J*	750 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	800 *UJ*	540 *J*	800 *UJ*	800 *UJ*	800 *UJ*	800 *UJ*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	590 *U*	340 *J*	590 *U*	590 *U*	590 *U*	590 *U*
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	600 *U*	80 *J*	600 *U*	600 *U*	600 *U*	600 *U*
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	650 *UJ*	710	70 *J*	650 *U*	650 *U*	650 *U*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	440 *J*	470 *J*	660 *U*	660 *U*	660 *U*	660 *U*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	83 *J*	440 *J*	580 *U*	580 *U*	580 *U*	580 *U*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	590 *UJ*	590 *U*	590 *U*	590 *U*	590 *U*	590 *U*
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	670 *UJ*	710 *J*	670 *UJ*	670 *UJ*	670 *UJ*	670 *UJ*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	830 *UJ*	530 *J*	830 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	610 *U*	220 *J*	610 *U*	610 *U*	610 *U*	610 *UJ*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	600 *U*	250 *J*	600 *U*	600 *U*	600 *U*	600 *UJ*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	700 *UJ*	380 *J*	700 *UJ*	700 *UJ*	700 *UJ*	700 *UJ*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	870 *UJ*	520 *J*	870 *UJ*	870 *UJ*	870 *UJ*	870 *UJ*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	130 *J*	630 *J*	750 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	180 *J*	630 *J*	820 *UJ*	820 *UJ*	820 *UJ*	820 *UJ*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	820 *UJ*	530 *J*	820 *UJ*	820 *UJ*	820 *UJ*	820 *UJ*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	970 *UJ*	170 *J*	970 *UJ*	970 *UJ*	970 *UJ*	970 *UJ*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	500 *U*	500 *UJ*	500 *U*	500 *U*	500 *U*	500 *UJ*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	550 *U*	550 *UJ*	550 *U*	550 *U*	550 *U*	550 *UJ*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	720 *UJ*	310 *J*	720 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	920 *UJ*	100 *J*	920 *UJ*	920 *UJ*	920 *UJ*	920 *UJ*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	450 *U*	450 *UJ*	450 *U*	450 *U*	450 *U*	450 *UJ*
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	450 *U*	450 *UJ*	450 *U*	450 *U*	450 *U*	450 *UJ*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	720 *UJ*	140 *J*	720 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	560 *UJ*	180 *J*	560 *U*	560 *U*	560 *U*	560 *U*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	610 *UJ*	610 *U*	610 *U*	610 *U*	610 *U*	610 *U*
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	87 *J*	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	590 *UJ*	190 *J*	590 *U*	590 *U*	590 *U*	590 *U*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	550 *UJ*	160 *J*	550 *U*	550 *U*	550 *U*	550 *U*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	1,200 *J*	100 *J*	570 *U*	570 *U*	570 *U*	570 *U*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	590 *UJ*	590 *U*	590 *U*	590 *U*	590 *U*	590 *U*
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	610 *UJ*	340 *J*	610 *U*	610 *U*	610 *U*	610 *U*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	340 *J*	91 *J*	890 *UJ*	890 *UJ*	890 *UJ*	890 *UJ*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	800 *UJ*	710 *J*	800 *UJ*	800 *UJ*	800 *UJ*	800 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Di-n-octyl phthalate (µg/kg dry)	Fluoranthene (µg/kg dry)	Fluorene (µg/kg dry)	Hexachloro-benzene (µg/kg dry)	Hexachloro-butadiene (µg/kg dry)	Hexachloro-cyclo-pentadiene (µg/kg dry)
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	910 *J*	630 *J*	2,300 *UJ*	2,300 *UJ*	2,300 *UJ*	2,300 *UJ*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	750 *UJ*	310 *J*	750 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	890 *UJ*	200 *J*	890 *UJ*	890 *UJ*	890 *UJ*	890 *UJ*
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	800 *UJ*	500 *J*	800 *UJ*	800 *UJ*	800 *UJ*	800 *UJ*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	750 *UJ*	660 *J*	77 *J*	750 *UJ*	750 *UJ*	750 *UJ*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	730 *UJ*	460 *J*	730 *UJ*	730 *UJ*	730 *UJ*	730 *UJ*
SD01	Ruplnd	10/23/1997	SD01	0	0	0	520 *UJ*	300 *J*	520 *U*	520 *U*	520 *U*	520 *U*
SD02	Ruplnd	10/24/1997	SD02	0	0	0	470 *U*	130 *J*	470 *U*	470 *U*	470 *U*	470 *U*
SD03	upland	10/23/1997	SD03	0	0	0	580 *UJ*	270 *J*	580 *U*	580 *U*	580 *U*	580 *U*
SD04	upland	10/24/1997	SD04	0	0	0	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*
SD05	upland	10/23/1997	SD05	0	0	0	1,000 *U*	2,500	1,200	1,000 *U*	1,000 *U*	1,000 *U*
SD06	upland	10/23/1997	SD06	0	0	0	1,700 *UJ*	260 *J*	1,700 *UJ*	1,700 *UJ*	1,700 *UJ*	1,700 *UJ*
SD07	upland	10/23/1997	SD07	0	0	0	1,600 *J*	24,000 *J*	2,400 *J*	5,000 *UJ*	5,000 *UJ*	5,000 *UJ*
SD08	upland	10/23/1997	SD08	0	0	0	1,700 *J*	1,400 *J*	7,700 *U*	7,700 *U*	7,700 *U*	7,700 *U*
SD09	upland	10/28/1997	SD09	0	0	0	820 *UJ*	130 *J*	820 *UJ*	820 *UJ*	820 *UJ*	820 *UJ*
SD10	upland	10/28/1997	SD10	0	0	0	1,300 *UJ*	220 *J*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*
SD11	upland	10/28/1997	SD11	0	0	0	1,600 *UJ*	1,400 *J*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*
SD12	upland	10/28/1997	SD12	0	0	0	1,100 *UJ*	120 *J*	1,100 *UJ*	1,100 *UJ*	1,100 *UJ*	1,100 *UJ*
SD13	upland	10/27/1997	SD13	0	0	0	520 *U*	1,200	520 *U*	520 *U*	520 *U*	520 *U*
SD14	upland	10/27/1997	SD14	0	0	0	620 *U*	390 *J*	620 *U*	620 *U*	620 *U*	620 *U*
SD15	upland	10/24/1997	SD15	0	0	0	380 *U*	380 *U*	380 *U*	380 *U*	380 *U*	380 *U*
SD16	upland	10/27/1997	SD16	0	0	0	550 *U*	1,800	550 *U*	550 *U*	550 *U*	550 *UJ*
SD17	upland	10/27/1997	SD17	0	0	0	650 *U*	320 *J*	650 *U*	650 *U*	650 *U*	650 *UJ*
SD18	upland	10/29/1997	SD18	0	0	0	600 *UJ*	74 *J*	600 *UJ*	600 *UJ*	600 *UJ*	600 *UJ*
SD19	upland	10/24/1997	SD19	0	0	0	400 *U*	400 *U*	400 *U*	400 *U*	400 *U*	400 *U*
SD20	upland	10/24/1997	SD20	A	0	0	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*
SD20	upland	10/24/1997	SD20	B	0	0	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*
SD21	Ruplnd	10/24/1997	SD21	0	0	0	370 *U*	370 *U*	370 *U*	370 *U*	370 *U*	370 *U*
SD22	upland	10/24/1997	SD22	0	0	0	400 *U*	400 *U*	400 *U*	400 *U*	400 *U*	400 *U*
SD23	upland	10/24/1997	SD23	0	0	0	380 *U*	380 *U*	380 *U*	380 *U*	380 *U*	380 *U*
SD24	river	10/27/1997	SD24	0	0	0	970 *UJ*	110 *J*	970 *UJ*	970 *UJ*	970 *UJ*	970 *UJ*
SD25	river	10/29/1997	SD25	0	0	0	1,000 *UJ*	200 *J*	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*
SD26	marsh	10/29/1997	SD26	0	0	0	1,900 *UJ*	1,900 *UJ*	1,900 *UJ*	1,900 *UJ*	1,900 *UJ*	1,900 *UJ*
SD27	river	10/30/1997	SD27	0	0	0	1,300 *UJ*	400 *J*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*
SD28	upland	10/28/1997	SD28	0	0	0	940 *UJ*	110 *J*	940 *UJ*	940 *UJ*	940 *UJ*	940 *UJ*
SD29	upland	10/27/1997	SD29	0	0	0	480 *U*	480 *U*	480 *U*	480 *U*	480 *U*	480 *UJ*
SD30	upland	10/29/1997	SD30	0	0	0	480 *UJ*	100 *J*	480 *UJ*	480 *UJ*	480 *UJ*	480 *UJ*
SD31	river	10/30/1997	SD31	0	0	0	1,000 *UJ*	700 *J*	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*
SD32	upland	10/28/1997	SD32	0	0	0	700 *UJ*	110 *J*	700 *UJ*	700 *UJ*	700 *UJ*	700 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Di-n-octyl phthalate (µg/kg dry)	Fluoranthene (µg/kg dry)	Fluorene (µg/kg dry)	Hexachloro-benzene (µg/kg dry)	Hexachloro-butadiene (µg/kg dry)	Hexachloro-cyclo-pentadiene (µg/kg dry)
SD33	marsh	10/28/1997	SD33	0	0	0	850 *UJ*	160 *J*	850 *UJ*	850 *UJ*	850 *UJ*	850 *UJ*
SD34	upland	10/30/1997	SD34	0	0	0	580 *UJ*	580 *U*	580 *U*	580 *U*	580 *U*	580 *UJ*
SD35	marsh	10/30/1997	SD35	0	0	0	750 *UJ*	370 *J*	750 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*
SD36	marsh	10/30/1997	SD36	0	0	0	480 *UJ*	480 *U*	480 *U*	480 *U*	480 *U*	480 *UJ*
SD37	marsh	10/30/1997	SD37	A	0	0	390 *UJ*	390 *U*	390 *U*	390 *U*	390 *U*	390 *UJ*
SD37	marsh	10/30/1997	SD37	B	0	0	400 *U*	88 *J*	400 *U*	400 *U*	400 *U*	400 *U*
SD38	river	6/24/1998	SD38	0	0	0	1,000 *UJ*	680 *J*	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*
SD39	river	6/24/1998	SD39	A	0	0	4,300 *UJ*	600 *J*	4,300 *UJ*	4,300 *UJ*	4,300 *UJ*	4,300 *UJ*
SD39	river	6/24/1998	SD39	B	0	0	4,500 *UJ*	810 *J*	4,500 *UJ*	4,500 *UJ*	4,500 *UJ*	4,500 *UJ*
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	4,400 *J*	320 *J*	730 *UJ*	730 *UJ*	730 *UJ*	730 *UJ*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	610 *U*	170 *J*	610 *U*	610 *U*	610 *U*	610 *U*
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	620 *U*	350 *J*	620 *U*	620 *U*	620 *U*	620 *U*
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	620 *U*	120 *J*	620 *U*	620 *U*	620 *U*	620 *U*
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	800 *J*	180 *J*	830 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	580 *U*	280 *J*	580 *U*	580 *U*	580 *U*	580 *U*
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	550 *U*	320 *J*	550 *U*	550 *U*	550 *U*	550 *U*
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	650 *U*	330 *J*	650 *U*	650 *U*	650 *U*	650 *U*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	2,400 *J*	260 *J*	1,100 *UJ*	1,100 *UJ*	1,100 *UJ*	1,100 *UJ*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	620 *U*	210 *J*	620 *U*	620 *U*	620 *U*	620 *U*
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	630 *UJ*	690	630 *U*	630 *U*	630 *U*	630 *U*
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	570 *U*	250 *J*	570 *U*	570 *U*	570 *U*	570 *U*
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	750 *UJ*	300 *J*	750 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	570 *U*	97 *J*	570 *U*	570 *U*	570 *U*	570 *U*
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	560 *UJ*	280 *J*	560 *U*	560 *U*	560 *U*	560 *U*
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	600 *U*	98 *J*	600 *U*	600 *U*	600 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	580 *U*	120 *J*	580 *U*	580 *U*	580 *U*	580 *U*
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	600 *U*	220 *J*	600 *U*	600 *U*	600 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	570 *U*	570 *U*	570 *U*	570 *U*	570 *U*	570 *U*
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	710 *UJ*	140 *J*	710 *UJ*	710 *UJ*	710 *UJ*	710 *UJ*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	580 *U*	160 *J*	580 *U*	580 *U*	580 *U*	580 *U*
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	630 *U*	630 *U*	630 *U*	630 *U*	630 *U*	630 *U*
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	590 *U*	360 *J*	590 *U*	590 *U*	590 *U*	590 *U*
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	510 *U*	310 *J*	510 *U*	510 *U*	510 *U*	510 *UJ*
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	560 *UJ*	550 *J*	560 *U*	560 *U*	560 *U*	560 *UJ*
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	540 *U*	75 *J*	540 *U*	540 *U*	540 *U*	540 *UJ*
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	520 *U*	240 *J*	520 *U*	520 *U*	520 *U*	520 *UJ*
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	1,600 *UJ*	270 *J*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	640 *U*	400 *J*	640 *U*	640 *U*	640 *U*	640 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Di-n-octyl phthalate (µg/kg dry)	Fluoranthene (µg/kg dry)	Fluorene (µg/kg dry)	Hexachloro-benzene (µg/kg dry)	Hexachloro-butadiene (µg/kg dry)	Hexachloro-cyclo-pentadiene (µg/kg dry)
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	610 *U*	160 *J*	610 *U*	610 *U*	610 *U*	610 *UJ*
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	820 *UJ*	630 *J*	820 *UJ*	820 *UJ*	820 *UJ*	820 *UJ*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	2,100 *UJ*	2,100 *UJ*	2,100 *UJ*	2,100 *UJ*	2,100 *UJ*	2,100 *UJ*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	680 *UJ*	260 *J*	680 *UJ*	680 *UJ*	680 *UJ*	680 *UJ*
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*	620 *UJ*
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	1,600 *UJ*	540 *J*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	730 *UJ*	730 *UJ*	730 *UJ*	730 *UJ*	730 *UJ*	730 *UJ*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	550 *U*	550 *U*	550 *U*	550 *U*	550 *U*	550 *UJ*
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	580 *U*	580 *U*	580 *U*	580 *U*	580 *U*	580 *UJ*
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	980 *UJ*	980 *UJ*	980 *UJ*	980 *UJ*	980 *UJ*	980 *UJ*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	410 *U*	120 *J*	410 *U*	410 *U*	410 *U*	410 *UJ*
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	670 *UJ*	280 *J*	670 *UJ*	670 *UJ*	670 *UJ*	670 *UJ*
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	590 *UJ*	470 *J*	590 *U*	590 *U*	590 *U*	590 *UJ*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	1,000 *J*	720	560 *U*	560 *U*	560 *U*	560 *UJ*
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	560 *U*	100 *J*	560 *U*	560 *U*	560 *U*	560 *U*
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	580 *U*	170 *J*	580 *U*	580 *U*	580 *U*	580 *U*
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	590 *U*	160 *J*	590 *U*	590 *U*	590 *U*	590 *U*
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	560 *UJ*	330 *J*	560 *UJ*	560 *UJ*	560 *UJ*	560 *UJ*

Note:
PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Hexachloro-ethane (µg/kg dry)	Indeno[1,2,3-cd]pyrene (µg/kg dry)	Isophorone (µg/kg dry)	Naphthalene (µg/kg dry)	Nitrobenzene (µg/kg dry)	N-nitroso-di-n-propylamine (µg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	600 *U*	110 *J*	600 *U*	600 *U*	600 *U*	600 *U*
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	660 *U*	120 *J*	660 *U*	660 *U*	660 *U*	660 *U*
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	620 *U*	620 *UJ*	620 *U*	620 *U*	620 *U*	620 *U*
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	670 *UJ*	160 *J*	670 *UJ*	670 *UJ*	670 *UJ*	670 *UJ*
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	420 *U*	420 *U*	420 *U*	420 *U*	420 *U*	420 *U*
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	500 *U*	55 *J*	500 *U*	500 *U*	500 *U*	500 *U*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	440 *U*	71 *J*	440 *U*	440 *U*	440 *U*	440 *U*
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	530 *U*	100 *J*	530 *U*	530 *U*	530 *U*	530 *U*
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	740 *UJ*	200 *J*	740 *UJ*	92 *J*	740 *UJ*	740 *UJ*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	750 *UJ*	150 *J*	750 *UJ*	460 *J*	750 *UJ*	750 *UJ*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	700 *UJ*	320 *J*	700 *UJ*	1,500 *J*	700 *UJ*	700 *UJ*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	800 *UJ*	330 *J*	800 *UJ*	350 *J*	800 *UJ*	800 *UJ*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	780 *UJ*	200 *J*	780 *UJ*	300 *J*	780 *UJ*	780 *UJ*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	760 *UJ*	280 *J*	760 *UJ*	580 *J*	760 *UJ*	760 *UJ*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	720 *UJ*	230 *J*	720 *UJ*	640 *J*	720 *UJ*	720 *UJ*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	780 *UJ*	200 *J*	780 *UJ*	130 *J*	780 *UJ*	780 *UJ*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	590 *U*	170 *J*	590 *U*	140 *J*	590 *U*	590 *U*
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	700 *UJ*	260 *J*	700 *UJ*	420 *J*	700 *UJ*	700 *UJ*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	640 *UJ*	150 *J*	640 *UJ*	600 *J*	640 *UJ*	640 *UJ*
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	700 *UJ*	250 *J*	700 *UJ*	420 *J*	700 *UJ*	700 *UJ*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	870 *UJ*	190 *J*	870 *UJ*	96 *J*	870 *UJ*	870 *UJ*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	790 *UJ*	190 *J*	790 *UJ*	130 *J*	790 *UJ*	790 *UJ*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	720 *UJ*	290 *J*	720 *UJ*	730 *J*	720 *UJ*	720 *UJ*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	970 *UJ*	400 *J*	970 *UJ*	190 *J*	970 *UJ*	970 *UJ*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	1,200 *UJ*	290 *J*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*	1,200 *UJ*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	700 *UJ*	700 *UJ*	700 *UJ*	700 *UJ*	700 *UJ*	1,400 *J*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	670 *UJ*	300 *J*	670 *UJ*	230 *J*	670 *UJ*	670 *UJ*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	780 *UJ*	190 *J*	780 *UJ*	370 *J*	780 *UJ*	780 *UJ*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	700 *UJ*	230 *J*	700 *UJ*	160 *J*	700 *UJ*	700 *UJ*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	680 *UJ*	170 *J*	680 *UJ*	490 *J*	680 *UJ*	680 *UJ*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	790 *UJ*	120 *J*	790 *UJ*	790 *UJ*	790 *UJ*	790 *UJ*
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6	830 *UJ*	190 *J*	830 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	770 *UJ*	240 *J*	770 *UJ*	770 *UJ*	770 *UJ*	770 *UJ*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	780 *UJ*	100 *J*	780 *UJ*	780 *UJ*	780 *UJ*	780 *UJ*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	830 *UJ*	160 *J*	830 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	860 *UJ*	110 *J*	860 *UJ*	860 *UJ*	860 *UJ*	860 *UJ*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	720 *UJ*	470 *J*	720 *UJ*	280 *J*	720 *UJ*	720 *UJ*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	670 *UJ*	250 *J*	670 *UJ*	150 *J*	670 *UJ*	670 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Hexachloro-ethane (µg/kg dry)	Indeno[1,2,3-cd]pyrene (µg/kg dry)	Isophorone (µg/kg dry)	Naphthalene (µg/kg dry)	Nitrobenzene (µg/kg dry)	N-nitroso-di-n-propylamine (µg/kg dry)
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	1,900 *UJ*	2,100 *UJ*	770 *UJ*	770 *UJ*	770 *UJ*	770 *UJ*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	920 *UJ*	240 *J*	920 *UJ*	920 *UJ*	920 *UJ*	920 *UJ*
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	590 *U*	150 *J*	590 *U*	140 *J*	590 *U*	590 *U*
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	650 *U*	250 *J*	650 *U*	200 *J*	650 *U*	650 *U*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	750 *UJ*	440 *J*	750 *UJ*	620 *J*	750 *UJ*	750 *UJ*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	800 *UJ*	200 *J*	800 *UJ*	100 *J*	800 *UJ*	800 *UJ*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	590 *U*	110 *J*	590 *U*	60 *J*	590 *U*	590 *U*
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	650 *U*	250 *J*	650 *U*	200 *J*	650 *U*	650 *U*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	660 *U*	210 *J*	660 *U*	660 *U*	660 *U*	660 *U*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	580 *U*	250 *J*	580 *U*	62 *J*	580 *U*	580 *U*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	590 *U*	590 *U*	590 *U*	590 *U*	590 *U*	590 *U*
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	670 *UJ*	400 *J*	670 *UJ*	130 *J*	670 *UJ*	670 *UJ*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	830 *UJ*	220 *J*	830 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	610 *U*	120 *J*	610 *U*	610 *U*	610 *U*	610 *U*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	600 *U*	170 *J*	600 *U*	600 *U*	600 *U*	600 *U*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	700 *UJ*	270 *J*	700 *UJ*	700 *UJ*	700 *UJ*	700 *UJ*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	870 *UJ*	210 *J*	870 *UJ*	870 *UJ*	870 *UJ*	870 *UJ*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	750 *UJ*	240 *J*	750 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	820 *UJ*	260 *J*	820 *UJ*	820 *UJ*	820 *UJ*	820 *UJ*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	820 *UJ*	230 *J*	820 *UJ*	820 *UJ*	820 *UJ*	820 *UJ*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	970 *UJ*	100 *J*	970 *UJ*	970 *UJ*	970 *UJ*	970 *UJ*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	500 *U*	500 *U*	500 *U*	500 *U*	500 *U*	500 *U*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	550 *U*	550 *U*	550 *U*	550 *U*	550 *U*	550 *U*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	720 *UJ*	110 *J*	720 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	920 *UJ*	920 *UJ*	920 *UJ*	920 *UJ*	920 *UJ*	920 *UJ*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	450 *U*	450 *U*	450 *U*	450 *U*	450 *U*	450 *U*
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	450 *U*	450 *U*	450 *U*	450 *U*	450 *U*	450 *U*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	720 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*	720 *UJ*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	560 *U*	110 *J*	560 *U*	560 *U*	560 *U*	560 *U*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	610 *U*	610 *U*	610 *U*	610 *U*	610 *U*	610 *U*
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	590 *U*	83 *J*	590 *U*	590 *U*	590 *U*	590 *U*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	550 *U*	85 *J*	550 *U*	550 *U*	550 *U*	550 *U*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	570 *U*	570 *U*	570 *U*	570 *U*	570 *U*	570 *U*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	590 *U*	590 *U*	590 *U*	590 *U*	590 *U*	590 *U*
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	610 *U*	180 *J*	610 *U*	610 *U*	610 *U*	610 *U*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	890 *UJ*	890 *UJ*	890 *UJ*	890 *UJ*	890 *UJ*	890 *UJ*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	800 *UJ*	240 *J*	800 *UJ*	800 *UJ*	800 *UJ*	800 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Hexachloro-ethane (µg/kg dry)	Indeno[1,2,3-cd]pyrene (µg/kg dry)	Isophorone (µg/kg dry)	Naphthalene (µg/kg dry)	Nitrobenzene (µg/kg dry)	N-nitroso-di-n-propylamine (µg/kg dry)
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	2,300 *UJ*	2,300 *UJ*	2,300 *UJ*	2,300 *UJ*	2,300 *UJ*	2,300 *UJ*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	750 *UJ*	180 *J*	750 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	890 *UJ*	200 *J*	890 *UJ*	890 *UJ*	890 *UJ*	890 *UJ*
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	800 *UJ*	230 *J*	800 *UJ*	800 *UJ*	800 *UJ*	800 *UJ*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	750 *UJ*	280 *J*	750 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	730 *UJ*	170 *J*	730 *UJ*	730 *UJ*	730 *UJ*	730 *UJ*
SD01	Ruplnd	10/23/1997	SD01	0	0	0	520 *U*	130 *J*	520 *U*	520 *U*	520 *U*	520 *U*
SD02	Ruplnd	10/24/1997	SD02	0	0	0	470 *U*	130 *J*	470 *U*	470 *U*	470 *U*	470 *U*
SD03	upland	10/23/1997	SD03	0	0	0	580 *U*	99 *J*	580 *U*	580 *U*	580 *U*	580 *U*
SD04	upland	10/24/1997	SD04	0	0	0	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*
SD05	upland	10/23/1997	SD05	0	0	0	1,000 *U*	390 *J*	1,000 *U*	1,000 *U*	1,000 *U*	1,000 *U*
SD06	upland	10/23/1997	SD06	0	0	0	1,700 *UJ*	220 *J*	1,700 *UJ*	1,700 *UJ*	1,700 *UJ*	1,700 *UJ*
SD07	upland	10/23/1997	SD07	0	0	0	5,000 *UJ*	9,500 *J*	5,000 *UJ*	1,100 *J*	5,000 *UJ*	5,000 *UJ*
SD08	upland	10/23/1997	SD08	0	0	0	7,700 *U*	7,700 *U*	7,700 *U*	1,200 *J*	7,700 *U*	7,700 *U*
SD09	upland	10/28/1997	SD09	0	0	0	820 *UJ*	300 *J*	820 *UJ*	820 *UJ*	820 *UJ*	820 *UJ*
SD10	upland	10/28/1997	SD10	0	0	0	1,300 *UJ*	370 *J*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*
SD11	upland	10/28/1997	SD11	0	0	0	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*
SD12	upland	10/28/1997	SD12	0	0	0	1,100 *UJ*	120 *J*	1,100 *UJ*	1,100 *UJ*	1,100 *UJ*	1,100 *UJ*
SD13	upland	10/27/1997	SD13	0	0	0	520 *U*	340 *J*	520 *U*	150 *J*	520 *U*	520 *U*
SD14	upland	10/27/1997	SD14	0	0	0	620 *U*	170 *J*	620 *U*	620 *U*	620 *U*	620 *U*
SD15	upland	10/24/1997	SD15	0	0	0	380 *U*	380 *U*	380 *U*	380 *U*	380 *U*	380 *U*
SD16	upland	10/27/1997	SD16	0	0	0	550 *U*	600	550 *U*	550 *U*	550 *U*	550 *U*
SD17	upland	10/27/1997	SD17	0	0	0	650 *U*	200 *J*	650 *U*	650 *U*	650 *U*	650 *U*
SD18	upland	10/29/1997	SD18	0	0	0	600 *UJ*	600 *UJ*	600 *UJ*	600 *UJ*	600 *UJ*	600 *UJ*
SD19	upland	10/24/1997	SD19	0	0	0	400 *U*	400 *U*	400 *U*	400 *U*	400 *U*	400 *U*
SD20	upland	10/24/1997	SD20	A	0	0	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*
SD20	upland	10/24/1997	SD20	B	0	0	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*
SD21	Ruplnd	10/24/1997	SD21	0	0	0	370 *U*	370 *U*	370 *U*	370 *U*	370 *U*	370 *U*
SD22	upland	10/24/1997	SD22	0	0	0	400 *U*	400 *U*	400 *U*	400 *U*	400 *U*	400 *U*
SD23	upland	10/24/1997	SD23	0	0	0	380 *U*	380 *U*	380 *U*	380 *U*	380 *U*	380 *U*
SD24	river	10/27/1997	SD24	0	0	0	970 *UJ*	970 *UJ*	970 *UJ*	970 *UJ*	970 *UJ*	970 *UJ*
SD25	river	10/29/1997	SD25	0	0	0	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*
SD26	marsh	10/29/1997	SD26	0	0	0	1,900 *UJ*	1,900 *UJ*	1,900 *UJ*	1,900 *UJ*	1,900 *UJ*	1,900 *UJ*
SD27	river	10/30/1997	SD27	0	0	0	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*	1,300 *UJ*
SD28	upland	10/28/1997	SD28	0	0	0	940 *UJ*	940 *UJ*	940 *UJ*	940 *UJ*	940 *UJ*	940 *UJ*
SD29	upland	10/27/1997	SD29	0	0	0	480 *U*	480 *U*	480 *U*	480 *U*	480 *U*	480 *U*
SD30	upland	10/29/1997	SD30	0	0	0	480 *UJ*	480 *UJ*	480 *UJ*	480 *UJ*	480 *UJ*	480 *UJ*
SD31	river	10/30/1997	SD31	0	0	0	1,000 *UJ*	190 *J*	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*
SD32	upland	10/28/1997	SD32	0	0	0	700 *UJ*	64 *J*	700 *UJ*	700 *UJ*	700 *UJ*	700 *UJ*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Hexachloro-ethane (µg/kg dry)	Indeno[1,2,3-cd]pyrene (µg/kg dry)	Isophorone (µg/kg dry)	Naphthalene (µg/kg dry)	Nitrobenzene (µg/kg dry)	N-nitroso-di-n-propylamine (µg/kg dry)
SD33	marsh	10/28/1997	SD33	0	0	0	850 *UJ*	140 *J*	850 *UJ*	850 *UJ*	850 *UJ*	850 *UJ*
SD34	upland	10/30/1997	SD34	0	0	0	580 *U*	580 *U*	580 *U*	580 *U*	580 *U*	580 *U*
SD35	marsh	10/30/1997	SD35	0	0	0	750 *UJ*	220 *J*	750 *UJ*	750 *UJ*	750 *UJ*	750 *UJ*
SD36	marsh	10/30/1997	SD36	0	0	0	480 *U*	480 *U*	480 *U*	480 *U*	480 *U*	480 *U*
SD37	marsh	10/30/1997	SD37	A	0	0	390 *U*	390 *U*	390 *U*	390 *U*	390 *U*	390 *U*
SD37	marsh	10/30/1997	SD37	B	0	0	400 *U*	400 *U*	400 *U*	400 *U*	400 *U*	400 *U*
SD38	river	6/24/1998	SD38	0	0	0	1,000 *UJ*	270 *J*	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*	1,000 *UJ*
SD39	river	6/24/1998	SD39	A	0	0	4,300 *UJ*	4,300 *UJ*	4,300 *UJ*	4,300 *UJ*	4,300 *UJ*	4,300 *UJ*
SD39	river	6/24/1998	SD39	B	0	0	4,500 *UJ*	4,500 *UJ*	4,500 *UJ*	4,500 *UJ*	4,500 *UJ*	4,500 *UJ*
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	730 *UJ*	200 *J*	730 *UJ*	210 *J*	730 *UJ*	730 *UJ*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	610 *U*	80 *J*	610 *U*	610 *U*	610 *U*	610 *U*
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	620 *U*	89 *J*	620 *U*	100 *J*	620 *U*	620 *U*
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	830 *UJ*	130 *J*	830 *UJ*	830 *UJ*	830 *UJ*	830 *UJ*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	580 *U*	79 *J*	580 *U*	64 *J*	580 *U*	580 *U*
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	550 *U*	81 *J*	550 *U*	68 *J*	550 *U*	550 *U*
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	650 *U*	110 *J*	650 *U*	120 *J*	650 *U*	650 *U*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	1,100 *UJ*	1,100 *R*	1,100 *UJ*	1,100 *UJ*	1,100 *UJ*	1,100 *UJ*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	620 *U*	620 *U*	620 *U*	79 *J*	620 *U*	620 *U*
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	630 *U*	120 *J*	630 *U*	180 *J*	630 *U*	630 *U*
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	570 *U*	84 *J*	570 *U*	130 *J*	570 *U*	570 *U*
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	750 *UJ*	120 *J*	750 *UJ*	120 *J*	750 *UJ*	750 *UJ*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	570 *U*	570 *U*	570 *U*	570 *U*	570 *U*	570 *U*
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	560 *U*	560 *UJ*	560 *U*	110 *J*	560 *U*	560 *U*
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	580 *U*	580 *U*	580 *U*	580 *U*	580 *U*	580 *U*
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	600 *U*	600 *U*	600 *U*	88 *J*	600 *U*	600 *U*
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	570 *U*	570 *U*	570 *U*	570 *U*	570 *U*	570 *U*
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	710 *UJ*	710 *UJ*	710 *UJ*	710 *UJ*	710 *UJ*	710 *UJ*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	580 *U*	580 *U*	580 *U*	63 *J*	580 *U*	580 *U*
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	630 *U*	630 *U*	630 *U*	630 *U*	630 *U*	630 *U*
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	590 *U*	240 *J*	590 *U*	92 *J*	590 *U*	590 *U*
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	510 *U*	110 *J*	510 *U*	51 *J*	510 *U*	510 *U*
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	560 *U*	240 *J*	560 *U*	180 *J*	560 *U*	560 *U*
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	540 *U*	540 *U*	540 *U*	540 *U*	540 *U*	540 *U*
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	520 *U*	130 *J*	520 *U*	63 *J*	520 *U*	520 *U*
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	640 *U*	130 *J*	640 *U*	640 *U*	640 *U*	640 *U*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Hexachloro-ethane (µg/kg dry)	Indeno[1,2,3-cd]pyrene (µg/kg dry)	Isophorone (µg/kg dry)	Naphthalene (µg/kg dry)	Nitrobenzene (µg/kg dry)	N-nitroso-di-n-propylamine (µg/kg dry)
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	610 *U*	610 *U*	610 *U*	610 *U*	610 *U*	610 *U*
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	820 *UJ*	210 *J*	820 *UJ*	98 *J*	820 *UJ*	820 *UJ*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	2,100 *UJ*	2,100 *UJ*	2,100 *UJ*	2,100 *UJ*	2,100 *UJ*	2,100 *UJ*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	680 *UJ*	75 *J*	680 *UJ*	680 *UJ*	680 *UJ*	680 *UJ*
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*	620 *U*
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*	1,600 *UJ*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	730 *UJ*	730 *UJ*	730 *UJ*	730 *UJ*	730 *UJ*	730 *UJ*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	550 *U*	550 *U*	550 *U*	550 *U*	550 *U*	550 *U*
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	580 *U*	580 *UJ*	580 *U*	580 *U*	580 *U*	580 *U*
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	980 *UJ*	980 *UJ*	980 *UJ*	980 *UJ*	980 *UJ*	980 *UJ*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	410 *U*	410 *U*	410 *U*	410 *U*	410 *U*	410 *UJ*
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	670 *UJ*	83 *J*	670 *UJ*	670 *UJ*	670 *UJ*	670 *UJ*
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	590 *U*	120 *J*	590 *U*	72 *J*	590 *U*	590 *U*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	560 *U*	80 *J*	560 *U*	59 *J*	560 *U*	560 *UJ*
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	560 *U*	59 *J*	560 *U*	560 *U*	560 *U*	560 *U*
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	580 *U*	580 *U*	580 *U*	67 *J*	580 *U*	580 *U*
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	590 *U*	590 *U*	590 *U*	66 *J*	590 *U*	590 *U*
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	560 *UJ*	270 *J*	560 *UJ*	140 *J*	560 *UJ*	560 *UJ*

Note:
PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	N-nitroso-diphenylamine (µg/kg dry)	Pentachloro-phenol (µg/kg dry)	Phenanthrene (µg/kg dry)	Phenol (µg/kg dry)	Pyrene (µg/kg dry)	Total PAHs (µg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	600 *U*	1,500 *U*	84 *J*	600 *U*	280 *J*	3,400 *J*
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	660 *U*	1,700 *U*	79 *J*	660 *U*	230 *J*	3,500 *J*
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	620 *U*	1,600 *U*	620 *U*	620 *U*	200 *J*	3,900 *J*
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	670 *UJ*	1,700 *UJ*	94 *J*	670 *UJ*	520 *J*	4,200 *J*
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	420 *U*	1,100 *U*	420 *U*	420 *U*	420 *UJ*	6,700 *UJ*
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	500 *U*	1,200 *U*	500 *U*	500 *U*	130 *J*	2,900 *J*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	440 *U*	1,100 *U*	440 *U*	440 *U*	110 *J*	2,400 *J*
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	530 *U*	1,300 *U*	110 *J*	530 *U*	340 *J*	3,400 *J*
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	740 *UJ*	1,900 *UJ*	240 *J*	740 *UJ*	2,000 *J*	7,100 *J*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	750 *UJ*	1,900 *UJ*	660 *J*	750 *UJ*	2,000 *J*	7,600 *J*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	700 *UJ*	1,800 *UJ*	940 *J*	700 *UJ*	2,000 *J*	12,000 *J*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	800 *UJ*	2,000 *UJ*	690 *J*	84 *J*	3,600 *J*	12,000 *J*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	780 *UJ*	2,000 *UJ*	170 *J*	780 *UJ*	680 *J*	5,200 *J*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	760 *UJ*	1,900 *UJ*	520 *J*	760 *UJ*	1,400 *J*	7,700 *J*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	720 *UJ*	1,800 *UJ*	510 *J*	720 *UJ*	880 *J*	7,100 *J*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	780 *UJ*	2,000 *UJ*	240 *J*	780 *UJ*	710 *J*	5,400 *J*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	590 *U*	1,500 *U*	230 *J*	590 *U*	2,700 *J*	7,600 *J*
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	700 *UJ*	1,800 *UJ*	740 *J*	91 *J*	2,600 *J*	9,800 *J*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	640 *UJ*	1,600 *UJ*	350 *J*	95 *J*	980 *J*	5,800 *J*
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	700 *UJ*	1,700 *UJ*	850 *J*	75 *J*	4,800 *J*	14,000 *J*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	870 *UJ*	2,200 *UJ*	270 *J*	870 *UJ*	1,700 *J*	8,100 *J*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	790 *UJ*	2,000 *UJ*	400 *J*	790 *UJ*	2,600 *J*	9,600 *J*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	720 *UJ*	1,800 *UJ*	410 *J*	720 *UJ*	1,800 *J*	8,900 *RJ*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	970 *UJ*	2,400 *UJ*	430 *J*	970 *UJ*	6,000 *J*	16,000 *J*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	1,200 *UJ*	3,000 *UJ*	170 *J*	1,200 *UJ*	1,200 *J*	8,200 *J*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	700 *UJ*	3,200 *J*	370 *J*	2,200 *J*	1,800 *J*	7,300 *J*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	670 *UJ*	1,700 *UJ*	840 *J*	670 *UJ*	890 *J*	7,000 *J*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	780 *UJ*	2,000 *UJ*	200 *J*	780 *UJ*	590 *J*	5,100 *J*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	1,300 *UJ*	3,200 *UJ*	150 *J*	1,300 *UJ*	460 *J*	7,100 *J*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	700 *UJ*	1,700 *UJ*	990 *J*	700 *UJ*	990 *J*	7,000 *J*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	680 *UJ*	1,700 *UJ*	320 *J*	680 *UJ*	620 *J*	5,100 *J*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	790 *UJ*	2,000 *UJ*	790 *UJ*	790 *UJ*	270 *J*	4,400 *J*
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6	830 *UJ*	2,100 *UJ*	130 *J*	830 *UJ*	590 *J*	5,000 *J*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	770 *UJ*	1,900 *UJ*	250 *J*	770 *UJ*	800 *J*	5,900 *J*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	780 *UJ*	2,000 *UJ*	150 *J*	780 *UJ*	400 *J*	4,100 *J*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	830 *UJ*	2,100 *UJ*	360 *J*	830 *UJ*	600 *J*	5,500 *J*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	860 *UJ*	2,200 *UJ*	860 *UJ*	860 *UJ*	270 *J*	4,700 *J*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	720 *UJ*	1,800 *UJ*	310 *J*	720 *UJ*	900 *J*	7,500 *J*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	670 *UJ*	1,700 *UJ*	300 *J*	670 *UJ*	660 *J*	5,800 *J*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	N-nitroso-diphenylamine (µg/kg dry)	Pentachloro-phenol (µg/kg dry)	Phenanthrene (µg/kg dry)	Phenol (µg/kg dry)	Pyrene (µg/kg dry)	Total PAHs (µg/kg dry)
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	830 *UJ*	830 *UJ*	830 *UJ*	770 *UJ*	2,100 *UJ*	20,000 *UJ*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	920 *UJ*	2,300 *UJ*	110 *J*	920 *UJ*	450 *J*	5,500 *J*
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	590 *U*	1,500 *U*	590 *U*	590 *U*	210 *J*	3,700 *J*
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	650 *U*	1,600 *U*	95 *J*	650 *U*	330 *J*	4,400 *J*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	140 *J*	1,900 *UJ*	220 *J*	750 *UJ*	720 *J*	7,400 *J*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	800 *UJ*	2,000 *UJ*	170 *J*	800 *UJ*	760 *J*	5,600 *J*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	590 *U*	1,500 *U*	120 *J*	590 *U*	330 *J*	3,400 *J*
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	600 *U*	1,500 *U*	600 *U*	600 *U*	81 *J*	3,900 *J*
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	650 *U*	1,600 *U*	270 *J*	650 *U*	1,100 *J*	6,800 *J*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	660 *U*	1,700 *U*	110 *J*	660 *U*	350 *J*	4,800 *J*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	580 *U*	1,400 *U*	130 *J*	580 *U*	290 *J*	4,400 *J*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	590 *U*	1,500 *U*	590 *U*	590 *U*	590 *U*	9,400 *U*
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	670 *UJ*	1,700 *UJ*	180 *J*	670 *UJ*	430 *J*	5,700 *J*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	830 *UJ*	2,100 *UJ*	110 *J*	830 *UJ*	530 *J*	5,800 *J*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	610 *U*	1,500 *U*	71 *J*	610 *U*	230 *J*	3,500 *J*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	600 *U*	1,500 *U*	86 *J*	600 *U*	240 *J*	3,700 *J*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	700 *UJ*	1,800 *UJ*	86 *J*	700 *UJ*	500 *J*	5,100 *J*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	870 *UJ*	2,200 *UJ*	870 *UJ*	870 *UJ*	360 *J*	5,600 *J*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	750 *UJ*	1,900 *UJ*	120 *J*	750 *UJ*	390 *J*	5,200 *J*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	820 *UJ*	2,100 *UJ*	170 *J*	820 *UJ*	420 *J*	5,600 *J*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	820 *UJ*	2,100 *UJ*	92 *J*	820 *UJ*	370 *J*	5,200 *J*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	970 *UJ*	2,400 *UJ*	970 *UJ*	970 *UJ*	280 *J*	5,400 *J*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	500 *U*	1,300 *U*	500 *U*	500 *U*	500 *UJ*	8,000 *UJ*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	550 *U*	1,400 *U*	550 *U*	550 *U*	550 *UJ*	8,800 *UJ*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	720 *UJ*	1,800 *UJ*	720 *UJ*	720 *UJ*	260 *J*	4,200 *J*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	920 *UJ*	2,300 *UJ*	920 *UJ*	920 *UJ*	160 *J*	6,400 *J*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	450 *U*	1,100 *U*	450 *U*	450 *U*	50 *J*	3,400 *J*
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	450 *U*	1,100 *U*	450 *U*	450 *U*	450 *UJ*	7,200 *UJ*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	720 *UJ*	1,800 *UJ*	720 *UJ*	720 *UJ*	140 *J*	4,800 *J*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	560 *U*	1,400 *U*	560 *U*	560 *U*	150 *J*	3,300 *J*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	610 *U*	1,500 *U*	610 *U*	610 *U*	610 *U*	9,800 *U*
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	620 *U*	1,600 *U*	620 *U*	620 *U*	620 *U*	9,900 *U*
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	590 *U*	1,500 *U*	590 *U*	590 *U*	140 *J*	3,000 *J*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	550 *U*	1,400 *U*	550 *U*	550 *U*	120 *J*	3,000 *J*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	570 *U*	1,400 *U*	570 *U*	570 *U*	69 *J*	3,900 *J*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	590 *U*	1,500 *U*	590 *U*	590 *U*	590 *U*	9,400 *U*
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	610 *U*	1,500 *U*	610 *U*	610 *U*	260 *J*	3,900 *J*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	890 *UJ*	2,200 *UJ*	890 *UJ*	890 *UJ*	100 *J*	6,400 *J*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	800 *UJ*	2,000 *UJ*	180 *J*	800 *UJ*	640 *J*	5,800 *J*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	N-nitroso-diphenylamine (µg/kg dry)	Pentachloro-phenol (µg/kg dry)	Phenanthrene (µg/kg dry)	Phenol (µg/kg dry)	Pyrene (µg/kg dry)	Total PAHs (µg/kg dry)
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	2,300 *UJ*	5,700 *UJ*	230 *J*	2,300 *UJ*	600 *J*	12,000 *J*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	750 *UJ*	1,900 *UJ*	120 *J*	750 *UJ*	530 *J*	5,000 *J*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	890 *UJ*	2,200 *UJ*	97 *J*	890 *UJ*	430 *J*	5,200 *J*
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	800 *UJ*	2,000 *UJ*	180 *J*	800 *UJ*	660 *J*	5,700 *J*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	750 *UJ*	1,900 *UJ*	260 *J*	750 *UJ*	1,000 *J*	6,300 *J*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	730 *UJ*	1,800 *UJ*	99 *J*	730 *UJ*	470 *J*	4,600 *J*
SD01	Ruplnd	10/23/1997	SD01	0	0	0	520 *U*	1,300 *U*	77 *J*	520 *U*	280 *J*	3,800 *J*
SD02	Ruplnd	10/24/1997	SD02	0	0	0	470 *U*	1,200 *U*	57 *J*	470 *U*	180 *J*	3,200 *J*
SD03	upland	10/23/1997	SD03	0	0	0	580 *U*	1,400 *U*	130 *J*	580 *U*	230 *J*	3,500 *J*
SD04	upland	10/24/1997	SD04	0	0	0	600 *U*	1,500 *U*	600 *U*	600 *U*	600 *U*	9,600 *UJ*
SD05	upland	10/23/1997	SD05	0	0	0	1,000 *U*	2,500 *U*	2,300	150 *J*	2,400	15,000 *J*
SD06	upland	10/23/1997	SD06	0	0	0	1,700 *UJ*	4,400 *UJ*	1,700 *UJ*	1,700 *UJ*	220 *J*	9,500 *J*
SD07	upland	10/23/1997	SD07	0	0	0	5,000 *UJ*	12,000 *UJ*	9,500 *J*	5,000 *UJ*	19,000 *J*	140,000 *J*
SD08	upland	10/23/1997	SD08	0	0	0	7,700 *U*	19,000 *U*	2,100 *J*	7,700 *U*	790 *J*	65,000 *J*
SD09	upland	10/28/1997	SD09	0	0	0	820 *UJ*	2,100 *UJ*	820 *UJ*	820 *UJ*	180 *J*	5,900 *J*
SD10	upland	10/28/1997	SD10	0	0	0	1,300 *UJ*	3,200 *UJ*	1,300 *UJ*	1,300 *UJ*	380 *J*	9,400 *J*
SD11	upland	10/28/1997	SD11	0	0	0	1,600 *UJ*	4,000 *UJ*	1,600 *UJ*	4,400 *J*	1,800 *J*	14,000 *J*
SD12	upland	10/28/1997	SD12	0	0	0	1,100 *UJ*	2,700 *UJ*	1,100 *UJ*	470 *J*	190 *J*	6,500 *J*
SD13	upland	10/27/1997	SD13	0	0	0	520 *U*	1,300 *U*	340 *J*	520 *U*	1,000	8,300 *J*
SD14	upland	10/27/1997	SD14	0	0	0	620 *U*	1,600 *U*	84 *J*	620 *U*	600 *J*	5,500 *J*
SD15	upland	10/24/1997	SD15	0	0	0	380 *U*	960 *U*	380 *U*	380 *U*	39 *J*	2,900 *J*
SD16	upland	10/27/1997	SD16	0	0	0	550 *U*	1,400 *UJ*	280 *J*	210 *J*	860	11,000 *J*
SD17	upland	10/27/1997	SD17	0	0	0	650 *U*	1,600 *UJ*	94 *J*	110 *J*	260 *J*	4,600 *J*
SD18	upland	10/29/1997	SD18	0	0	0	600 *UJ*	1,500 *UJ*	600 *UJ*	600 *UJ*	66 *J*	3,700 *J*
SD19	upland	10/24/1997	SD19	0	0	0	400 *U*	1,000 *U*	400 *U*	400 *U*	400 *U*	6,400 *U*
SD20	upland	10/24/1997	SD20	A	0	0	11,000 *UJ*	29,000 *UJ*	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	180,000 *UJ*
SD20	upland	10/24/1997	SD20	B	0	0	11,000 *UJ*	28,000 *UJ*	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	180,000 *UJ*
SD21	Ruplnd	10/24/1997	SD21	0	0	0	370 *U*	930 *U*	370 *U*	370 *U*	370 *U*	5,900 *U*
SD22	upland	10/24/1997	SD22	0	0	0	400 *U*	1,000 *U*	400 *U*	400 *U*	400 *U*	2,500 *J*
SD23	upland	10/24/1997	SD23	0	0	0	380 *U*	940 *U*	380 *U*	380 *U*	380 *U*	6,100 *U*
SD24	river	10/27/1997	SD24	0	0	0	970 *UJ*	2,400 *UJ*	970 *UJ*	970 *UJ*	970 *UJ*	6,600 *J*
SD25	river	10/29/1997	SD25	0	0	0	1,000 *UJ*	2,500 *UJ*	1,000 *UJ*	1,000 *UJ*	250 *J*	6,000 *J*
SD26	marsh	10/29/1997	SD26	0	0	0	1,900 *UJ*	4,900 *UJ*	1,900 *UJ*	1,900 *UJ*	1,900 *UJ*	14,000 *J*
SD27	river	10/30/1997	SD27	0	0	0	1,300 *UJ*	3,200 *UJ*	1,300 *UJ*	1,300 *UJ*	310 *J*	8,200 *J*
SD28	upland	10/28/1997	SD28	0	0	0	940 *UJ*	2,400 *UJ*	940 *UJ*	940 *UJ*	100 *J*	5,400 *J*
SD29	upland	10/27/1997	SD29	0	0	0	480 *U*	1,200 *UJ*	480 *U*	480 *U*	480 *U*	7,700 *UJ*
SD30	upland	10/29/1997	SD30	0	0	0	480 *UJ*	1,200 *UJ*	49 *J*	480 *UJ*	80 *J*	2,500 *J*
SD31	river	10/30/1997	SD31	0	0	0	1,000 *UJ*	2,500 *UJ*	230 *J*	1,000 *UJ*	560 *J*	7,200 *J*
SD32	upland	10/28/1997	SD32	0	0	0	700 *UJ*	1,700 *UJ*	700 *UJ*	700 *UJ*	120 *J*	3,500 *J*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	N-nitroso-diphenylamine (µg/kg dry)	Pentachloro-phenol (µg/kg dry)	Phenanthrene (µg/kg dry)	Phenol (µg/kg dry)	Pyrene (µg/kg dry)	Total PAHs (µg/kg dry)
SD33	marsh	10/28/1997	SD33	0	0	0	850 *UJ*	2,100 *UJ*	850 *UJ*	850 *UJ*	210 *J*	4,800 *J*
SD34	upland	10/30/1997	SD34	0	0	0	580 *U*	1,400 *UJ*	580 *U*	580 *U*	580 *U*	9,300 *U*
SD35	marsh	10/30/1997	SD35	0	0	0	750 *UJ*	1,900 *UJ*	96 *J*	750 *UJ*	250 *J*	5,500 *J*
SD36	marsh	10/30/1997	SD36	0	0	0	480 *U*	1,200 *UJ*	480 *U*	120 *J*	480 *U*	7,700 *U*
SD37	marsh	10/30/1997	SD37	A	0	0	390 *U*	990 *UJ*	390 *U*	140 *J*	390 *U*	6,200 *U*
SD37	marsh	10/30/1997	SD37	B	0	0	400 *U*	1,000 *UJ*	400 *U*	110 *J*	62 *J*	2,600 *J*
SD38	river	6/24/1998	SD38	0	0	0	1,000 *UJ*	2,500 *UJ*	160 *J*	1,000 *UJ*	670 *J*	6,400 *J*
SD39	river	6/24/1998	SD39	A	0	0	4,300 *UJ*	11,000 *UJ*	4,300 *UJ*	4,300 *UJ*	770 *J*	30,000 *J*
SD39	river	6/24/1998	SD39	B	0	0	4,500 *UJ*	11,000 *UJ*	4,500 *UJ*	4,500 *UJ*	810 *J*	28,000 *J*
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	730 *UJ*	1,800 *UJ*	730 *UJ*	180 *J*	1,700 *J*	7,300 *RJ*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	610 *U*	1,500 *U*	610 *U*	610 *U*	210 *J*	3,800 *J*
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	620 *U*	1,600 *U*	85 *J*	620 *U*	440 *J*	4,000 *J*
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	620 *U*	1,600 *U*	620 *U*	620 *U*	130 *J*	3,700 *J*
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	830 *UJ*	2,100 *UJ*	830 *UJ*	240 *J*	600 *J*	5,800 *RJ*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	580 *U*	1,500 *U*	69 *J*	580 *U*	340 *J*	3,600 *J*
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	550 *U*	1,400 *U*	74 *J*	550 *U*	390 *J*	3,600 *J*
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	650 *U*	1,600 *U*	96 *J*	650 *U*	430 *J*	4,300 *J*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	1,100 *UJ*	2,800 *UJ*	1,100 *UJ*	1,900 *J*	2,200 *J*	11,000 *RJ*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	620 *U*	1,600 *U*	620 *U*	620 *U*	270 *J*	4,100 *J*
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	630 *U*	1,600 *U*	140 *J*	630 *U*	1,200	6,300 *J*
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	570 *U*	1,400 *U*	100 *J*	83 *J*	260 *J*	3,400 *J*
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	750 *UJ*	1,900 *UJ*	180 *J*	380 *J*	430 *J*	4,500 *J*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	570 *U*	1,400 *U*	570 *U*	570 *U*	90 *J*	3,100 *J*
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	560 *U*	1,400 *U*	70 *J*	560 *U*	260 *J*	3,600 *J*
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	600 *U*	1,500 *U*	600 *U*	64 *J*	600 *U*	9,600 *U*
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	600 *U*	1,500 *U*	600 *U*	600 *U*	130 *J*	3,400 *J*
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	580 *U*	1,500 *U*	580 *U*	580 *U*	120 *J*	3,300 *J*
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	600 *U*	1,500 *U*	63 *J*	600 *U*	250 *J*	3,400 *J*
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	570 *U*	1,400 *U*	570 *U*	570 *U*	58 *J*	3,400 *J*
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	710 *UJ*	1,800 *UJ*	83 *J*	710 *UJ*	170 *J*	3,900 *J*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	580 *U*	1,500 *U*	580 *U*	580 *U*	140 *J*	3,400 *J*
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	630 *U*	1,600 *U*	630 *U*	630 *U*	630 *U*	10,000 *U*
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	590 *U*	1,500 *U*	160 *J*	590 *U*	240 *J*	4,000 *J*
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	510 *U*	1,300 *U*	160 *J*	510 *U*	350 *J*	3,400 *J*
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	87 *J*	1,400 *U*	200 *J*	67 *J*	820 *J*	5,500 *J*
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	540 *U*	1,400 *U*	540 *U*	540 *U*	81 *J*	3,900 *J*
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	520 *U*	1,300 *U*	120 *J*	520 *U*	280 *J*	3,100 *J*
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	1,600 *UJ*	4,100 *UJ*	1,600 *UJ*	1,600 *UJ*	310 *J*	11,000 *J*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	640 *U*	1,600 *U*	96 *J*	640 *U*	450 *J*	4,500 *J*

Table E-2. Semivolatile organic compound results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	N-nitroso-diphenylamine (µg/kg dry)	Pentachloro-phenol (µg/kg dry)	Phenanthrene (µg/kg dry)	Phenol (µg/kg dry)	Pyrene (µg/kg dry)	Total PAHs (µg/kg dry)
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	610 *U*	1,500 *U*	610 *U*	610 *U*	160 *J*	3,600 *J*
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	820 *UJ*	2,100 *UJ*	150 *J*	820 *UJ*	740 *J*	5,300 *J*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	2,100 *UJ*	5,200 *UJ*	2,100 *UJ*	2,100 *UJ*	220 *J*	16,000 *J*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	680 *UJ*	1,700 *UJ*	680 *UJ*	680 *UJ*	270 *J*	4,100 *J*
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	620 *U*	1,600 *U*	620 *U*	620 *U*	620 *U*	9,900 *U*
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	1,600 *UJ*	4,100 *UJ*	240 *J*	170 *J*	720 *J*	9,700 *J*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	730 *UJ*	1,800 *UJ*	730 *UJ*	730 *UJ*	730 *UJ*	12,000 *UJ*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	550 *U*	1,400 *U*	550 *U*	550 *U*	550 *U*	8,800 *U*
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	580 *U*	1,500 *U*	580 *U*	580 *U*	580 *U*	9,300 *UJ*
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	980 *UJ*	2,500 *UJ*	980 *UJ*	980 *UJ*	980 *UJ*	16,000 *UJ*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	410 *U*	1,000 *U*	97 *J*	140 *J*	170 *J*	2,300 *J*
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	670 *UJ*	1,700 *UJ*	68 *J*	670 *UJ*	330 *J*	4,000 *J*
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	83 *J*	1,500 *U*	91 *J*	590 *U*	610	4,100 *J*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	560 *U*	1,400 *U*	880	560 *U*	830 *J*	5,200 *J*
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	560 *U*	1,400 *U*	560 *U*	560 *U*	130 *J*	2,800 *J*
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	580 *U*	1,500 *U*	580 *U*	580 *U*	130 *J*	3,400 *J*
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	590 *U*	1,500 *U*	590 *U*	590 *U*	180 *J*	3,300 *J*
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	560 *UJ*	1,400 *UJ*	180 *J*	560 *UJ*	490 *J*	4,300 *J*

Note:
PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-3. Pesticide/PCB results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	4,4'-DDD (µg/kg dry)	4,4'-DDE (µg/kg dry)	4,4'-DDT (µg/kg dry)	Aldrin (µg/kg dry)	alpha-Chlordane (µg/kg dry)	alpha-Endosulfan (µg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	6.1 *UJ*	6.1 *UJ*	6.1 *UJ*	4.1 *UJ*	3.1 *UJ*	3.1 *UJ*
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	6.6 *U*	6.6 *U*	6.6 *U*	3.4 *U*	3.4 *U*	3.4 *U*
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	6.3 *U*	6.3 *U*	6.3 *U*	3.2 *U*	3.2 *U*	3.2 *U*
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	6.6 *U*	6.6 *U*	6.6 *U*	3.4 *U*	3.4 *U*	3.4 *U*
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	4.2 *R*	4.2 *R*	1.5 *J*	2.2 *R*	0.29 *J*	2.2 *R*
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	1.6 *J*	8.4 *JN*	5.0 *U*	2.6 *U*	2.6 *U*	2.6 *U*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	4.3 *U*	4.3 *U*	4.3 *U*	2.2 *U*	2.2 *U*	2.2 *U*
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	2.8 *J*	5.5	5.3 *U*	2.7 *U*	2.7 *U*	2.7 *U*
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	19 *J*	31 *J*	7.3 *UJ*	6.6 *JN*	3.8 *UJ*	3.8 *UJ*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	29 *J*	110 *JN*	170 *J*	15 *J*	3.9 *UJ*	3.9 *UJ*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	7.1 *UJ*	7.1 *UJ*	7.1 *UJ*	12 *J*	3.6 *UJ*	3.6 *UJ*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	17 *J*	44 *JN*	7.9 *J*	19 *J*	4.1 *UJ*	4.1 *UJ*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	16 *UJ*	32 *JN*	16 *UJ*	8.0 *UJ*	8.0 *UJ*	8.0 *UJ*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	17 *J*	42 *JN*	30 *J*	2.5 *J*	4.0 *UJ*	4.0 *UJ*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	5.3 *J*	12 *JN*	24 *J*	2.1 *J*	3.7 *UJ*	3.7 *UJ*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	16 *UJ*	55 *JN*	190 *JN*	8.1 *UJ*	8.1 *UJ*	8.1 *UJ*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	9.9	21 *JN*	15 *J*	4.3 *JN*	3.0 *U*	3.0 *U*
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	33 *J*	100 *JN*	58 *J*	3.6 *UJ*	3.6 *UJ*	3.6 *UJ*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	0.98 *J*	6.6 *UJ*	6.6 *UJ*	8.7 *J*	3.4 *UJ*	3.4 *UJ*
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	22 *J*	42 *JN*	92 *J*	5.3 *R*	3.7 *UJ*	3.7 *UJ*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	30 *J*	59 *J*	8.7 *UJ*	19 *JN*	4.5 *UJ*	4.5 *UJ*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	14 *J*	16 *JN*	8.1 *UJ*	8.5 *J*	4.1 *UJ*	4.1 *UJ*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	0.82 *J*	7.3 *UJ*	7.3 *UJ*	10 *J*	3.7 *UJ*	3.7 *UJ*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	29 *J*	34 *JN*	9.7 *UJ*	7.7 *JN*	5.0 *UJ*	5.0 *UJ*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	12 *UJ*	12 *UJ*	12 *UJ*	6.0 *UJ*	6.0 *UJ*	6.0 *UJ*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	7.0 *UJ*	1.2 *J*	7.0 *UJ*	3.6 *UJ*	3.6 *UJ*	3.6 *UJ*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	6.6 *UJ*	6.6 *UJ*	2.7 *J*	3.4 *UJ*	3.4 *UJ*	3.4 *UJ*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	9.1 *J*	16 *J*	13 *J*	4.0 *UJ*	4.0 *UJ*	4.0 *UJ*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	7.0 *J*	15 *J*	13 *UJ*	6.5 *UJ*	6.5 *UJ*	6.5 *UJ*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	15 *J*	35 *J*	22 *J*	4.1 *UJ*	4.1 *UJ*	4.1 *UJ*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	6.7 *UJ*	1.6 *J*	6.7 *UJ*	3.4 *UJ*	3.4 *UJ*	3.4 *UJ*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	6.7 *J*	20 *J*	16 *J*	4.1 *UJ*	4.1 *UJ*	4.1 *UJ*
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6	9.2 *J*	42 *J*	22 *J*	4.3 *UJ*	4.3 *UJ*	4.3 *UJ*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	15 *JN*	48 *J*	120 *J*	4.0 *UJ*	4.0 *UJ*	4.0 *UJ*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	7.7 *UJ*	27 *JN*	7.7 *UJ*	4.0 *UJ*	4.0 *UJ*	4.0 *UJ*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	6.3 *J*	23 *J*	8.2 *UJ*	4.2 *UJ*	4.2 *UJ*	4.2 *UJ*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	8.6 *UJ*	5.1 *J*	19 *J*	4.4 *UJ*	4.4 *UJ*	4.4 *UJ*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	7.3 *UJ*	7.3 *UJ*	3.3 *J*	3.8 *UJ*	3.8 *UJ*	3.8 *UJ*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	6.7 *UJ*	6.7 *UJ*	6.7 *UJ*	3.5 *UJ*	3.5 *UJ*	3.5 *UJ*

Table E-3. Pesticide/PCB results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	4,4'-DDD (µg/kg dry)	4,4'-DDE (µg/kg dry)	4,4'-DDT (µg/kg dry)	Aldrin (µg/kg dry)	alpha-Chlordane (µg/kg dry)	alpha-Endosulfan (µg/kg dry)
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	15 *UJ*	16 *JN*	15 *UJ*	7.7 *UJ*	7.7 *UJ*	7.7 *UJ*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	0.88 *J*	9.2 *UJ*	9.2 *R*	4.7 *R*	4.7 *R*	4.7 *R*
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	0.17 *J*	5.9 *U*	0.53 *J*	3.0 *U*	3.0 *U*	3.0 *U*
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	6.5 *U*	6.5 *U*	6.5 *U*	3.3 *U*	3.3 *U*	6.5 *U*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	7.5 *UJ*	7.5 *UJ*	7.5 *UJ*	3.9 *R*	3.9 *R*	3.9 *R*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	1.1 *J*	8.0 *UJ*	8.0 *UJ*	4.1 *UJ*	4.1 *UJ*	4.1 *UJ*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	5.9 *U*	5.9 *U*	5.9 *U*	3.1 *U*	3.1 *U*	3.1 *U*
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	6.0 *U*	6.0 *U*	6.0 *U*	3.1 *U*	3.1 *U*	3.1 *U*
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	6.4 *U*	6.4 *U*	6.4 *U*	3.3 *U*	3.3 *U*	3.3 *U*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	0.72 *J*	3.5 *J*	6.6 *U*	3.4 *U*	3.4 *U*	3.4 *U*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	5.8 *U*	5.8 *U*	5.8 *U*	3.0 *U*	3.0 *U*	3.0 *U*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	5.9 *U*	1.6 *J*	5.9 *U*	3.0 *U*	3.0 *U*	3.0 *U*
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	6.7 *UJ*	6.7 *UJ*	6.7 *U*	3.5 *UJ*	3.5 *UJ*	3.5 *UJ*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	6.0 *J*	12 *J*	8.3 *UJ*	4.3 *UJ*	4.3 *UJ*	4.3 *UJ*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	6.1 *U*	6.1 *U*	0.80 *J*	3.2 *U*	3.2 *U*	3.2 *U*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	6.0 *U*	6.0 *U*	6.0 *U*	3.1 *U*	3.1 *U*	3.1 *U*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	7.0 *UJ*	7.0 *UJ*	7.0 *UJ*	3.6 *UJ*	3.6 *UJ*	3.6 *UJ*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	8.7 *UJ*	30 *J*	8.7 *UJ*	13 *J*	4.5 *UJ*	4.5 *UJ*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	7.5 *UJ*	36 *J*	9.9 *R*	3.9 *UJ*	3.9 *UJ*	3.9 *UJ*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	8.2 *UJ*	45 *J*	8.2 *UJ*	17 *J*	4.2 *UJ*	4.2 *UJ*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	8.4 *J*	21 *J*	16 *J*	6.0 *J*	4.2 *UJ*	4.2 *UJ*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	5.6 *J*	9.2 *J*	19 *UJ*	10 *UJ*	2.9 *J*	10 *UJ*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	5.0 *U*	1.3 *J*	5.0 *U*	2.6 *U*	2.6 *U*	2.6 *U*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	5.5 *U*	5.5 *U*	5.5 *U*	2.8 *U*	2.8 *U*	2.8 *U*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	2.9 *J*	6.3 *J*	7.2 *UJ*	3.7 *UJ*	3.7 *UJ*	3.7 *UJ*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	9.2 *UJ*	6.8 *J*	9.2 *UJ*	4.7 *UJ*	4.7 *UJ*	4.7 *UJ*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	4.5 *U*	0.67 *J*	4.5 *U*	2.3 *U*	2.3 *U*	2.3 *U*
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	4.5 *U*	0.48 *J*	4.5 *U*	2.3 *U*	2.3 *U*	2.3 *U*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	5.4 *J*	6.7 *J*	7.2 *UJ*	3.7 *UJ*	3.8 *J*	3.7 *UJ*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	5.6 *U*	4.4 *J*	5.6 *U*	2.9 *U*	2.9 *U*	2.9 *U*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	6.1 *U*	6.1 *U*	6.1 *U*	3.1 *U*	3.1 *U*	3.1 *U*
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	5.5 *U*	5.5 *U*	5.5 *U*	2.8 *U*	2.8 *U*	2.8 *U*
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	5.9 *U*	5.9 *U*	5.9 *U*	3.0 *U*	3.0 *U*	3.0 *U*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	1.7 *J*	2.3 *J*	3.2 *J*	3.6 *UJ*	3.6 *UJ*	3.6 *UJ*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	5.7 *U*	0.68 *J*	5.7 *U*	2.9 *U*	2.9 *U*	2.9 *U*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	0.13 *J*	5.9 *U*	5.9 *U*	3.0 *U*	3.0 *U*	3.0 *U*
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	6.1 *U*	6.1 *U*	6.1 *U*	3.1 *U*	3.1 *U*	3.1 *U*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	2.6 *J*	6.0 *J*	8.9 *UJ*	4.6 *UJ*	8.9 *UJ*	4.6 *UJ*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	5.0 *J*	8.0 *UJ*	8.0 *UJ*	4.1 *UJ*	4.1 *UJ*	4.1 *UJ*

Table E-3. Pesticide/PCB results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	4,4'-DDD (µg/kg dry)	4,4'-DDE (µg/kg dry)	4,4'-DDT (µg/kg dry)	Aldrin (µg/kg dry)	alpha-Chlordane (µg/kg dry)	alpha-Endosulfan (µg/kg dry)
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	7.5 *UJ*	11 *J*	7.5 *UJ*	3.9 *UJ*	3.9 *UJ*	3.9 *UJ*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	7.5 *UJ*	9.5 *J*	7.5 *UJ*	3.9 *UJ*	1.1 *J*	3.9 *UJ*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	4.6 *J*	8.2 *J*	8.9 *UJ*	4.6 *UJ*	2.5 *J*	4.6 *UJ*
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	8.0 *UJ*	12 *J*	8.0 *UJ*	4.1 *UJ*	4.1 *UJ*	4.1 *UJ*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	4.6 *JN*	24 *JN*	12 *R*	3.9 *UJ*	3.9 *UJ*	3.9 *UJ*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	5.7 *J*	14 *J*	7.3 *UJ*	3.8 *UJ*	3.8 *UJ*	3.8 *UJ*
SD01	Ruplnd	10/23/1997	SD01	0	0	0	26 *U*	26 *U*	26 *U*	13 *U*	13 *U*	13 *U*
SD02	Ruplnd	10/24/1997	SD02	0	0	0	4.7 *U*	4.7 *U*	4.7 *U*	2.4 *U*	2.4 *U*	2.4 *U*
SD03	upland	10/23/1997	SD03	0	0	0	58 *U*	58 *U*	58 *U*	30 *U*	30 *U*	30 *U*
SD04	upland	10/24/1997	SD04	0	0	0	6.0 *U*	6.0 *U*	6.0 *U*	3.1 *U*	3.1 *U*	3.1 *U*
SD05	upland	10/23/1997	SD05	0	0	0	500 *U*	500 *U*	500 *U*	260 *U*	260 *U*	260 *U*
SD06	upland	10/23/1997	SD06	0	0	0	180 *UJ*	180 *UJ*	180 *UJ*	94 *UJ*	94 *UJ*	94 *UJ*
SD07	upland	10/23/1997	SD07	0	0	0	210 *UJ*	210 *UJ*	210 *UJ*	89 *J*	110 *UJ*	110 *UJ*
SD08	upland	10/23/1997	SD08	0	0	0	52 *U*	0 *R*	0 *R*	190 *J*	76	26 *U*
SD09	upland	10/28/1997	SD09	0	0	0	20 *J*	63 *J*	8.2 *UJ*	4.2 *UJ*	4.2 *UJ*	4.2 *UJ*
SD10	upland	10/28/1997	SD10	0	0	0	13 *J*	47 *J*	13 *UJ*	6.5 *UJ*	44 *J*	6.5 *UJ*
SD11	upland	10/28/1997	SD11	0	0	0	1,100 *UJ*	1,100 *UJ*	1,100 *UJ*	590 *UJ*	51 *J*	590 *UJ*
SD12	upland	10/28/1997	SD12	0	0	0	11 *UJ*	110 *J*	11 *UJ*	5.5 *UJ*	5.5 *UJ*	5.5 *UJ*
SD13	upland	10/27/1997	SD13	0	0	0	0 *R*	5.2 *U*	5.2 *U*	2.7 *U*	10 *JN*	2.7 *U*
SD14	upland	10/27/1997	SD14	0	0	0	17 *J*	6.2 *U*	20	3.2 *U*	1.1 *J*	4.9 *JN*
SD15	upland	10/24/1997	SD15	0	0	0	0 *R*	0 *R*	0 *R*	0 *R*	0 *R*	0 *R*
SD16	upland	10/27/1997	SD16	0	0	0	0 *R*	5.5 *U*	5.5 *U*	2.8 *U*	0 *R*	2.8 *U*
SD17	upland	10/27/1997	SD17	0	0	0	6.4 *U*	6.4 *U*	0 *R*	3.3 *U*	6.4 *J*	3.3 *U*
SD18	upland	10/29/1997	SD18	0	0	0	19 *J*	6.0 *UJ*	6.0 *UJ*	3.1 *UJ*	0 *R*	3.1 *UJ*
SD19	upland	10/24/1997	SD19	0	0	0	4.0 *U*	4.0 *U*	4.0 *U*	2.1 *U*	1.0 *J*	2.1 *U*
SD20	upland	10/24/1997	SD20	A	0	0	76 *U*	240	76 *U*	39 *U*	100 *JN*	39 *U*
SD20	upland	10/24/1997	SD20	B	0	0	19 *U*	180	19 *U*	9.7 *U*	220 *JN*	9.7 *U*
SD21	Ruplnd	10/24/1997	SD21	0	0	0	3.7 *U*	3.7 *U*	3.7 *U*	1.9 *J*	1.9 *U*	2.0 *JN*
SD22	upland	10/24/1997	SD22	0	0	0	4.0 *U*	12	4.0 *U*	4.2 *J*	10 *J*	2.1 *U*
SD23	upland	10/24/1997	SD23	0	0	0	3.8 *U*	3.8 *U*	3.8 *U*	1.9 *U*	0.38 *J*	1.9 *U*
SD24	river	10/27/1997	SD24	0	0	0	3.0 *J*	3.6 *J*	9.7 *UJ*	5.0 *UJ*	5.0 *UJ*	5.0 *UJ*
SD25	river	10/29/1997	SD25	0	0	0	19 *J*	14 *J*	10 *UJ*	5.2 *UJ*	4.7 *J*	5.2 *UJ*
SD26	marsh	10/29/1997	SD26	0	0	0	17 *J*	14 *J*	19 *UJ*	10 *UJ*	10 *UJ*	10 *UJ*
SD27	river	10/30/1997	SD27	0	0	0	16 *JN*	13 *UJ*	13 *UJ*	6.5 *UJ*	12 *J*	6.5 *UJ*
SD28	upland	10/28/1997	SD28	0	0	0	11 *J*	9.7 *J*	9.4 *UJ*	4.8 *UJ*	4.8 *UJ*	4.8 *UJ*
SD29	upland	10/27/1997	SD29	0	0	0	4.8 *U*	4.8 *U*	4.8 *U*	2.5 *U*	2.5 *U*	2.5 *U*
SD30	upland	10/29/1997	SD30	0	0	0	4.8 *UJ*	3.1 *J*	7.0 *JN*	2.7 *J*	2.5 *UJ*	2.5 *UJ*
SD31	river	10/30/1997	SD31	0	0	0	20 *J*	19 *J*	10 *UJ*	5.2 *UJ*	5.2 *UJ*	5.2 *UJ*
SD32	upland	10/28/1997	SD32	0	0	0	7.0 *UJ*	2.6 *J*	9.8 *J*	3.6 *UJ*	3.6 *UJ*	3.6 *UJ*

Table E-3. Pesticide/PCB results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	4,4'-DDD (µg/kg dry)	4,4'-DDE (µg/kg dry)	4,4'-DDT (µg/kg dry)	Aldrin (µg/kg dry)	alpha-Chlordane (µg/kg dry)	alpha-Endosulfan (µg/kg dry)
SD33	marsh	10/28/1997	SD33	0	0	0	22 *J*	17 *J*	8.5 *UJ*	4.4 *UJ*	5.8 *JN*	4.4 *UJ*
SD34	upland	10/30/1997	SD34	0	0	0	2.6 *J*	4.4 *J*	5.8 *U*	3.0 *U*	5.1 *JN*	3.0 *U*
SD35	marsh	10/30/1997	SD35	0	0	0	7.5 *UJ*	7.5 *UJ*	7.5 *UJ*	3.9 *UJ*	4.3 *JN*	3.9 *UJ*
SD36	marsh	10/30/1997	SD36	0	0	0	4.8 *U*	4.8 *U*	5.8	2.5 *U*	3.0 *J*	2.5 *U*
SD37	marsh	10/30/1997	SD37	A	0	0	0.41 *J*	0.62 *J*	3.9 *U*	2.0 *U*	2.0 *U*	2.0 *U*
SD37	marsh	10/30/1997	SD37	B	0	0	4.0 *U*	0.88 *J*	54	2.0 *U*	2.0 *U*	2.0 *U*
SD38	river	6/24/1998	SD38	0	0	0	12 *J*	43 *J*	9.9 *UJ*	30 *J*	5.1 *UJ*	5.1 *UJ*
SD39	river	6/24/1998	SD39	A	0	0	8.6 *UJ*	8.6 *UJ*	8.6 *UJ*	4.4 *UJ*	4.4 *UJ*	4.4 *UJ*
SD39	river	6/24/1998	SD39	B	0	0	9.1 *UJ*	9.1 *UJ*	9.1 *UJ*	4.7 *UJ*	4.7 *UJ*	4.7 *UJ*
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	420 *J*	100 *R*	190 *R*	38 *UJ*	38 *UJ*	38 *UJ*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	6.1 *U*	6.1 *U*	6.1 *UJ*	3.2 *U*	3.2 *U*	3.2 *U*
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	6.3 *U*	6.3 *U*	6.3 *UJ*	4.2 *J*	3.2 *U*	3.2 *U*
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	25	6.0 *U*	9.0 *R*	3.1 *U*	3.1 *U*	3.1 *U*
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	130 *J*	45 *R*	54 *R*	4.2 *UJ*	4.2 *UJ*	4.2 *UJ*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	5.7 *U*	5.7 *U*	5.7 *UJ*	3.0 *U*	3.0 *U*	3.0 *U*
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	6.1 *U*	6.1 *U*	6.1 *U*	3.5	3.1 *U*	3.1 *U*
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	37 *J*	15 *R*	420 *J*	23 *J*	3.3 *U*	3.3 *U*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	130 *J*	15 *UJ*	88 *R*	9.5 *R*	7.6 *UJ*	7.6 *UJ*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	5.8 *U*	5.8 *UJ*	5.8 *U*	3.0 *U*	3.0 *U*	3.0 *U*
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	6.4 *U*	6.4 *UJ*	6.4 *U*	3.3 *U*	3.3 *U*	3.3 *U*
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	5.5 *U*	5.5 *UJ*	5.5 *U*	3.3 *R*	2.8 *U*	2.8 *U*
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	13 *J*	7.1 *UJ*	7.1 *UJ*	4.8 *R*	3.6 *UJ*	3.6 *UJ*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	5.6 *U*	5.6 *UJ*	5.6 *U*	2.9 *U*	2.9 *U*	2.9 *U*
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	5.4 *U*	5.4 *UJ*	5.4 *U*	2.8 *U*	2.8 *U*	2.8 *U*
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	5.4 *U*	5.4 *UJ*	5.4 *U*	4.2 *J*	2.8 *U*	2.8 *U*
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	7.8	5.9 *UJ*	5.9 *U*	5.0	3.1 *U*	3.1 *U*
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	5.2 *U*	5.2 *UJ*	5.2 *U*	2.7 *U*	2.7 *U*	2.7 *U*
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	5.7 *U*	5.7 *UJ*	5.7 *U*	2.9 *U*	2.9 *U*	2.9 *U*
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	5.6 *U*	5.6 *UJ*	5.6 *U*	2.9 *U*	2.9 *U*	2.9 *U*
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	8.1 *J*	6.7 *UJ*	6.7 *UJ*	5.9 *R*	3.5 *UJ*	3.5 *UJ*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	5.6 *U*	5.6 *UJ*	5.6 *U*	2.9 *U*	2.9 *U*	2.9 *U*
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	5.6 *U*	5.6 *UJ*	5.6 *U*	2.9 *U*	2.9 *U*	2.9 *U*
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	5.7 *U*	5.7 *U*	5.7 *U*	3.0 *U*	3.0 *U*	3.0 *U*
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	5.0 *U*	5.0 *U*	24 *J*	6.9 *JN*	2.6 *U*	2.6 *U*
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	5.7 *U*	5.7 *U*	5.7 *U*	2.9 *U*	2.9 *U*	2.9 *U*
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	5.4 *U*	5.4 *U*	5.4 *U*	2.8 *U*	2.8 *U*	2.8 *U*
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	5.1 *U*	5.1 *U*	5.1 *U*	2.6 *U*	2.6 *U*	2.6 *U*
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	16 *UJ*	16 *J*	16 *UJ*	8.2 *UJ*	8.2 *UJ*	8.2 *UJ*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	6.4 *U*	6.4 *U*	6.4 *U*	3.3 *U*	3.3 *U*	3.3 *U*

Table E-3. Pesticide/PCB results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	4,4'-DDD (µg/kg dry)	4,4'-DDE (µg/kg dry)	4,4'-DDT (µg/kg dry)	Aldrin (µg/kg dry)	alpha-Chlordane (µg/kg dry)	alpha-Endosulfan (µg/kg dry)
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	6.2 *U*	6.2 *U*	6.2 *U*	3.2 *U*	3.2 *U*	3.2 *U*
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	8.3 *UJ*	8.3 *UJ*	0.72 *J*	4.3 *UJ*	4.3 *UJ*	4.3 *UJ*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	10 *UJ*	20 *UJ*	20 *UJ*	7.9 *UJ*	11 *UJ*	11 *UJ*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	6.7 *UJ*	6.7 *UJ*	6.7 *UJ*	3.5 *UJ*	3.5 *UJ*	3.5 *UJ*
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	5.8 *U*	5.8 *U*	5.8 *U*	3.0 *U*	3.0 *U*	3.0 *U*
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	47 *J*	22 *J*	16 *UJ*	8.7 *J*	8.4 *UJ*	8.4 *UJ*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	7.4 *UJ*	7.4 *UJ*	7.4 *UJ*	3.8 *UJ*	3.8 *UJ*	3.8 *UJ*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	5.5 *U*	5.5 *U*	5.5 *U*	2.9 *U*	2.9 *U*	2.9 *U*
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	5.7 *U*	5.7 *U*	5.7 *U*	2.9 *U*	2.9 *U*	2.9 *U*
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	28 *J*	13 *JN*	9.9 *UJ*	10 *J*	5.1 *UJ*	5.1 *UJ*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	8.1	4.1 *U*	4.1 *UJ*	2.1 *U*	2.1 *U*	2.1 *U*
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	6.7 *UJ*	6.7 *UJ*	6.7 *UJ*	3.4 *UJ*	3.4 *UJ*	3.4 *UJ*
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	6.1 *U*	6.1 *U*	6.1 *U*	3.1 *U*	3.1 *U*	3.1 *U*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	12	5.6 *U*	5.6 *UJ*	50	2.9 *U*	2.9 *U*
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	5.1 *U*	5.1 *UJ*	6.1 *J*	2.3 *U*	2.6 *U*	2.6 *U*
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	5.3 *U*	5.3 *UJ*	5.3 *U*	2.7 *U*	2.7 *U*	2.7 *U*
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	5.5 *U*	5.5 *UJ*	5.5 *U*	2.8 *U*	2.8 *U*	2.8 *U*
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	5.6 *U*	5.6 *UJ*	5.6 *U*	3.2 *JN*	2.9 *U*	2.9 *U*

Note:

Rriver	-	river reference zone
Ruplnd	-	upland reference zone
J	-	estimated
N	-	tentatively identified
U	-	undetected at detection limit shown
R	-	rejected

Table E-3. Pesticide/PCB results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	alpha-Hexachloro-cyclohexane (µg/kg dry)	beta-Endosulfan (µg/kg dry)	beta-Hexachloro cyclohexane (µg/kg dry)	delta-Hexachloro-cyclohexane (µg/kg dry)	Dieldrin (µg/kg dry)	Endosulfan sulfate (µg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	3.1 *UJ*	6.1 *UJ*	3.1 *UJ*	3.1 *UJ*	6.1 *UJ*	6.1 *UJ*
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	3.4 *U*	6.6 *U*	3.4 *U*	3.4 *U*	6.6 *U*	6.6 *U*
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	3.2 *U*	6.3 *U*	3.2 *U*	3.2 *U*	6.3 *U*	6.3 *U*
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	3.4 *U*	6.6 *U*	3.4 *U*	3.4 *U*	6.6 *U*	6.6 *U*
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	0.87 *J*	4.2 *R*	2.2 *R*	2.2 *R*	4.2 *R*	4.2 *R*
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	2.6 *U*	5.0 *U*	3.4 *R*	2.6 *U*	2.2 *J*	5.0 *U*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	2.2 *U*	4.3 *U*	2.2 *U*	2.2 *U*	4.3 *U*	4.3 *U*
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	2.7 *U*	5.3 *U*	2.7 *U*	2.7 *U*	5.3 *U*	5.3 *U*
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	3.8 *UJ*	7.3 *UJ*	3.8 *UJ*	3.8 *UJ*	7.3 *UJ*	7.3 *UJ*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	3.9 *UJ*	7.5 *UJ*	3.9 *UJ*	3.9 *UJ*	7.5 *J*	7.5 *UJ*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	3.6 *UJ*	2.6 *J*	3.6 *UJ*	3.6 *UJ*	7.1 *UJ*	7.1 *UJ*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	4.1 *UJ*	7.9 *UJ*	4.1 *UJ*	4.1 *UJ*	7.9 *J*	7.9 *UJ*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	8.0 *UJ*	16 *UJ*	8.0 *UJ*	8.0 *UJ*	16 *UJ*	16 *UJ*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	4.0 *UJ*	7.7 *UJ*	4.0 *UJ*	4.0 *UJ*	7.7 *UJ*	7.7 *UJ*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	3.7 *UJ*	7.2 *UJ*	3.9 *R*	3.7 *UJ*	7.2 *UJ*	7.2 *UJ*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	3.1 *J*	16 *UJ*	8.1 *UJ*	8.1 *UJ*	16 *UJ*	16 *UJ*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	3.0 *U*	5.9 *U*	3.0 *U*	3.0 *UJ*	5.9 *U*	5.9 *U*
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	3.6 *UJ*	7.0 *UJ*	3.6 *UJ*	3.6 *UJ*	7.0 *UJ*	7.0 *UJ*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	3.4 *UJ*	6.6 *UJ*	3.4 *UJ*	3.4 *UJ*	6.6 *UJ*	6.6 *UJ*
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	3.7 *UJ*	7.3 *UJ*	3.7 *UJ*	3.7 *UJ*	7.3 *UJ*	7.3 *UJ*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	4.5 *UJ*	8.7 *UJ*	4.5 *UJ*	1.4 *J*	8.7 *UJ*	8.7 *UJ*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	4.1 *UJ*	8.1 *UJ*	4.1 *UJ*	4.1 *UJ*	8.1 *UJ*	8.1 *UJ*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	3.7 *UJ*	7.3 *UJ*	3.7 *UJ*	0.69 *J*	7.3 *UJ*	7.3 *UJ*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	5.0 *UJ*	9.7 *UJ*	5.0 *UJ*	5.0 *UJ*	9.7 *UJ*	3.9 *J*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	1.4 *J*	12 *UJ*	6.0 *UJ*	6.0 *UJ*	22 *J*	12 *UJ*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	3.6 *UJ*	7.0 *UJ*	3.6 *UJ*	3.6 *UJ*	7.0 *UJ*	7.0 *UJ*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	3.4 *UJ*	6.6 *UJ*	3.4 *UJ*	3.4 *UJ*	6.6 *UJ*	6.6 *UJ*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	0.95 *J*	7.8 *UJ*	4.0 *UJ*	4.0 *UJ*	7.8 *UJ*	7.8 *UJ*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	6.5 *UJ*	13 *UJ*	6.5 *UJ*	6.5 *UJ*	13 *UJ*	13 *UJ*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	4.1 *UJ*	8.0 *UJ*	4.1 *UJ*	4.1 *UJ*	8.0 *UJ*	6.1 *J*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	3.4 *UJ*	6.7 *UJ*	3.4 *UJ*	3.4 *UJ*	6.7 *UJ*	6.7 *UJ*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	4.1 *UJ*	8.0 *UJ*	4.1 *UJ*	4.1 *UJ*	8.0 *UJ*	8.0 *UJ*
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6	4.3 *UJ*	8.3 *UJ*	4.3 *UJ*	4.3 *UJ*	8.3 *UJ*	8.3 *UJ*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	4.7 *J*	7.8 *UJ*	4.8 *R*	4.0 *UJ*	7.8 *UJ*	7.8 *UJ*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	4.0 *UJ*	7.7 *UJ*	4.0 *UJ*	4.0 *UJ*	7.7 *UJ*	7.7 *UJ*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	2.9 *J*	8.2 *UJ*	4.2 *UJ*	4.2 *UJ*	8.2 *UJ*	8.2 *UJ*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	0.65 *J*	8.6 *UJ*	4.4 *UJ*	4.4 *UJ*	8.6 *UJ*	8.6 *UJ*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	3.8 *UJ*	7.3 *UJ*	3.8 *UJ*	3.8 *UJ*	7.3 *UJ*	7.3 *UJ*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	3.5 *UJ*	6.7 *UJ*	3.9 *R*	3.5 *UJ*	6.7 *UJ*	2.2 *J*

Table E-3. Pesticide/PCB results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	alpha-Hexachloro-cyclohexane (µg/kg dry)	beta-Endosulfan (µg/kg dry)	beta-Hexachloro cyclohexane (µg/kg dry)	delta-Hexachloro-cyclohexane (µg/kg dry)	Dieldrin (µg/kg dry)	Endosulfan sulfate (µg/kg dry)
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	7.7 *UJ*	15 *UJ*	7.7 *U*	7.7 *UJ*	15 *UJ*	15 *UJ*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	4.7 *UJ*	9.2 *R*	4.7 *UJ*	4.7 *R*	9.2 *R*	9.2 *UJ*
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	3.0 *U*	5.9 *U*	3.0 *U*	3.0 *U*	5.9 *U*	5.9 *U*
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	3.3 *U*	6.5 *U*	11 *R*	3.3 *U*	6.5 *U*	6.5 *U*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	3.9 *UJ*	7.5 *R*	3.9 *UJ*	3.9 *R*	7.5 *R*	7.5 *UJ*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	4.1 *UJ*	8.0 *UJ*	4.1 *UJ*	4.1 *UJ*	8.0 *UJ*	8.0 *UJ*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	3.1 *U*	5.9 *U*	3.1 *U*	3.1 *UJ*	5.9 *U*	5.9 *U*
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	3.1 *U*	6.0 *J*	3.1 *U*	3.1 *U*	6.0 *U*	6.0 *U*
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	3.3 *U*	6.4 *U*	3.3 *U*	3.3 *UJ*	6.4 *U*	6.4 *U*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	3.4 *U*	6.6 *U*	3.4 *U*	3.4 *U*	6.6 *U*	6.6 *U*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	3.0 *U*	5.8 *U*	3.0 *U*	3.0 *U*	5.8 *U*	5.8 *U*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	3.0 *U*	5.9 *U*	3.0 *U*	3.0 *U*	5.9 *U*	5.9 *U*
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	3.5 *UJ*	6.7 *UJ*	3.5 *UJ*	3.5 *UJ*	6.7 *UJ*	6.7 *UJ*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	4.3 *UJ*	8.3 *UJ*	4.3 *UJ*	4.3 *UJ*	8.3 *UJ*	8.3 *UJ*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	3.2 *U*	6.1 *U*	3.2 *U*	3.2 *U*	6.1 *U*	6.1 *U*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	3.1 *U*	6.0 *U*	3.1 *U*	3.1 *U*	6.0 *U*	6.0 *U*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	3.6 *UJ*	7.0 *UJ*	3.6 *UJ*	3.6 *UJ*	7.0 *UJ*	7.0 *UJ*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	4.5 *UJ*	4.7 *J*	27 *R*	4.5 *UJ*	8.7 *UJ*	11 *J*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	3.9 *UJ*	7.5 *UJ*	3.9 *UJ*	3.9 *UJ*	7.5 *UJ*	7.5 *UJ*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	8.3 *R*	13 *J*	23 *R*	4.2 *UJ*	8.2 *UJ*	8.2 *UJ*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	4.2 *UJ*	8.2 *UJ*	13 *J*	4.2 *UJ*	8.2 *UJ*	8.2 *UJ*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	10 *UJ*	19 *UJ*	10 *UJ*	10 *UJ*	19 *UJ*	19 *UJ*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	2.6 *U*	5.0 *U*	2.6 *U*	2.6 *U*	5.0 *U*	5.0 *U*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	2.8 *U*	5.5 *U*	2.8 *U*	2.8 *U*	5.5 *U*	5.5 *U*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	3.7 *UJ*	7.2 *UJ*	3.7 *UJ*	3.7 *UJ*	7.2 *UJ*	7.2 *UJ*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	4.7 *UJ*	9.2 *UJ*	4.7 *UJ*	4.7 *UJ*	9.2 *UJ*	9.2 *UJ*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	2.3 *U*	4.5 *U*	2.3 *U*	2.3 *U*	4.5 *U*	4.5 *U*
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	2.3 *U*	4.5 *U*	2.3 *U*	2.3 *U*	4.5 *U*	4.5 *U*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	3.7 *UJ*	7.2 *UJ*	3.7 *UJ*	3.7 *UJ*	7.2 *UJ*	7.2 *UJ*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	2.9 *U*	5.6 *U*	2.9 *U*	2.9 *U*	5.6 *U*	5.6 *U*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	3.1 *J*	6.1 *U*	3.1 *U*	3.1 *U*	6.1 *U*	6.1 *U*
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	2.8 *U*	5.5 *U*	2.8 *U*	2.8 *U*	5.5 *U*	5.5 *U*
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	3.0 *U*	5.9 *U*	6.2 *R*	3.0 *U*	5.9 *U*	5.9 *U*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	3.6 *UJ*	7.0 *UJ*	3.6 *UJ*	3.6 *UJ*	7.0 *UJ*	1.5 *J*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	2.9 *U*	5.7 *U*	2.9 *U*	2.9 *U*	5.7 *U*	5.7 *U*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	3.0 *UJ*	5.9 *U*	3.0 *U*	3.0 *U*	5.9 *U*	5.9 *U*
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	3.1 *U*	6.1 *U*	6.5 *R*	3.1 *U*	6.1 *U*	6.1 *U*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	4.6 *UJ*	8.9 *UJ*	4.6 *UJ*	4.6 *UJ*	8.9 *UJ*	8.9 *UJ*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	4.1 *UJ*	8.0 *UJ*	4.1 *UJ*	4.1 *UJ*	8.0 *UJ*	8.0 *UJ*

Table E-3. Pesticide/PCB results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	alpha-Hexachloro-cyclohexane (µg/kg dry)	beta-Endosulfan (µg/kg dry)	beta-Hexachloro cyclohexane (µg/kg dry)	delta-Hexachloro-cyclohexane (µg/kg dry)	Dieldrin (µg/kg dry)	Endosulfan sulfate (µg/kg dry)
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	3.9 *UJ*	7.5 *UJ*	3.9 *UJ*	3.9 *UJ*	2.0 *J*	7.5 *UJ*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	3.9 *UJ*	7.5 *UJ*	3.9 *UJ*	3.9 *UJ*	7.5 *UJ*	7.5 *UJ*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	0.70 *J*	8.9 *UJ*	4.6 *UJ*	4.6 *UJ*	8.9 *UJ*	8.9 *UJ*
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	4.1 *UJ*	8.0 *UJ*	4.1 *UJ*	4.1 *UJ*	4.1 *UJ*	8.0 *UJ*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	3.9 *UJ*	7.5 *UJ*	3.9 *UJ*	3.9 *UJ*	7.5 *UJ*	7.5 *UJ*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	3.8 *UJ*	7.3 *UJ*	3.8 *UJ*	3.8 *UJ*	7.3 *UJ*	7.3 *UJ*
SD01	Ruplnd	10/23/1997	SD01	0	0	0	13 *U*	26 *U*	13 *U*	13 *U*	26 *U*	26 *U*
SD02	Ruplnd	10/24/1997	SD02	0	0	0	2.4 *U*	4.7 *U*	2.4 *U*	2.4 *U*	4.7 *U*	4.7 *U*
SD03	upland	10/23/1997	SD03	0	0	0	30 *U*	58 *U*	30 *U*	30 *U*	58 *U*	58 *U*
SD04	upland	10/24/1997	SD04	0	0	0	3.1 *U*	6.0 *U*	3.9	3.1 *U*	6.0 *U*	6.0 *U*
SD05	upland	10/23/1997	SD05	0	0	0	260 *U*	540 *U*	260 *U*	260 *U*	500 *U*	500 *U*
SD06	upland	10/23/1997	SD06	0	0	0	94 *UJ*	180 *UJ*	94 *UJ*	94 *UJ*	180 *UJ*	180 *UJ*
SD07	upland	10/23/1997	SD07	0	0	0	110 *UJ*	210 *UJ*	110 *UJ*	110 *UJ*	210 *UJ*	210 *UJ*
SD08	upland	10/23/1997	SD08	0	0	0	26 *U*	52 *U*	26 *U*	26 *U*	52 *U*	52 *U*
SD09	upland	10/28/1997	SD09	0	0	0	2.1 *J*	0 *R*	1.1 *J*	4.2 *UJ*	0 *R*	8.2 *UJ*
SD10	upland	10/28/1997	SD10	0	0	0	6.5 *UJ*	0 *R*	6.5 *UJ*	35 *JN*	13 *UJ*	13 *UJ*
SD11	upland	10/28/1997	SD11	0	0	0	590 *UJ*	1,100 *UJ*	590 *UJ*	590 *UJ*	1,100 *UJ*	1,100 *UJ*
SD12	upland	10/28/1997	SD12	0	0	0	5.5 *UJ*	0 *R*	5.5 *UJ*	5.5 *UJ*	11 *UJ*	0 *R*
SD13	upland	10/27/1997	SD13	0	0	0	2.7 *U*	5.2 *U*	0 *R*	2.8 *JN*	5.2 *U*	5.2 *U*
SD14	upland	10/27/1997	SD14	0	0	0	3.2 *U*	6.2 *U*	3.2 *U*	3.2 *U*	6.2 *U*	6.2 *U*
SD15	upland	10/24/1997	SD15	0	0	0	0 *R*	0 *R*	0 *R*	0 *R*	0 *R*	0 *R*
SD16	upland	10/27/1997	SD16	0	0	0	2.8 *U*	5.5 *U*	0 *R*	2.8 *U*	5.5 *U*	5.5 *U*
SD17	upland	10/27/1997	SD17	0	0	0	3.3 *U*	34	3.3 *U*	3.3 *U*	6.4 *U*	6.4 *U*
SD18	upland	10/29/1997	SD18	0	0	0	3.1 *UJ*	6.0 *UJ*	3.1 *UJ*	3.1 *UJ*	6.0 *UJ*	6.0 *J*
SD19	upland	10/24/1997	SD19	0	0	0	2.1 *U*	5.9	2.1 *U*	2.1 *U*	4.0 *U*	4.0 *U*
SD20	upland	10/24/1997	SD20	A	0	0	39 *U*	1,200	0 *R*	39 *U*	76 *U*	76 *U*
SD20	upland	10/24/1997	SD20	B	0	0	9.6 *U*	630	0 *R*	9.7 *U*	180 *JN*	19 *U*
SD21	Ruplnd	10/24/1997	SD21	0	0	0	1.9 *U*	3.7 *U*	1.9 *U*	1.9 *U*	3.7 *U*	3.7 *U*
SD22	upland	10/24/1997	SD22	0	0	0	2.1 *U*	4.0 *U*	6.2 *J*	2.1 *U*	14 *JN*	4.0 *U*
SD23	upland	10/24/1997	SD23	0	0	0	1.9 *U*	3.8 *U*	1.9 *U*	0.60 *J*	3.8 *U*	3.8 *U*
SD24	river	10/27/1997	SD24	0	0	0	5.0 *UJ*	9.7 *UJ*	5.0 *UJ*	5.0 *UJ*	9.7 *UJ*	9.7 *UJ*
SD25	river	10/29/1997	SD25	0	0	0	5.2 *UJ*	10 *UJ*	5.2 *UJ*	5.2 *UJ*	10 *UJ*	10 *UJ*
SD26	marsh	10/29/1997	SD26	0	0	0	10 *UJ*	19 *UJ*	10 *UJ*	10 *UJ*	19 *UJ*	1.8 *J*
SD27	river	10/30/1997	SD27	0	0	0	6.5 *UJ*	13 *UJ*	6.5 *UJ*	6.5 *UJ*	13 *UJ*	13 *UJ*
SD28	upland	10/28/1997	SD28	0	0	0	4.8 *UJ*	9.4 *UJ*	4.8 *UJ*	4.8 *UJ*	9.4 *UJ*	9.4 *UJ*
SD29	upland	10/27/1997	SD29	0	0	0	0.47 *J*	4.8 *U*	2.5 *U*	2.5 *U*	4.8 *U*	4.8 *U*
SD30	upland	10/29/1997	SD30	0	0	0	2.5 *UJ*	1.6 *J*	2.5 *UJ*	2.5 *UJ*	4.8 *UJ*	4.8 *UJ*
SD31	river	10/30/1997	SD31	0	0	0	5.2 *UJ*	10 *UJ*	5.2 *UJ*	5.2 *UJ*	10 *UJ*	10 *UJ*
SD32	upland	10/28/1997	SD32	0	0	0	3.6 *UJ*	7.0 *UJ*	3.6 *UJ*	3.6 *UJ*	7.0 *UJ*	7.0 *UJ*

Table E-3. Pesticide/PCB results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	alpha-Hexachloro-cyclohexane (µg/kg dry)	beta-Endosulfan (µg/kg dry)	beta-Hexachloro cyclohexane (µg/kg dry)	delta-Hexachloro-cyclohexane (µg/kg dry)	Dieldrin (µg/kg dry)	Endosulfan sulfate (µg/kg dry)
SD33	marsh	10/28/1997	SD33	0	0	0	4.4 *UJ*	8.5 *UJ*	4.4 *UJ*	4.4 *UJ*	8.5 *UJ*	8.5 *UJ*
SD34	upland	10/30/1997	SD34	0	0	0	3.0 *U*	5.8 *U*	3.0 *U*	3.0 *U*	5.8 *U*	5.8 *U*
SD35	marsh	10/30/1997	SD35	0	0	0	3.9 *UJ*	7.5 *UJ*	3.9 *UJ*	3.9 *UJ*	7.5 *UJ*	7.5 *UJ*
SD36	marsh	10/30/1997	SD36	0	0	0	2.5 *U*	4.8 *U*	2.5 *U*	2.5 *U*	4.8 *U*	4.8 *U*
SD37	marsh	10/30/1997	SD37	A	0	0	2.0 *U*	3.9 *U*	2.0 *U*	2.0 *U*	3.9 *U*	3.9 *U*
SD37	marsh	10/30/1997	SD37	B	0	0	2.0 *U*	4.0 *U*	2.0 *U*	2.0 *U*	4.0 *U*	4.0 *U*
SD38	river	6/24/1998	SD38	0	0	0	5.1 *UJ*	9.9 *UJ*	5.1 *UJ*	5.1 *UJ*	34 *J*	9.9 *UJ*
SD39	river	6/24/1998	SD39	A	0	0	4.4 *UJ*	8.6 *UJ*	4.4 *UJ*	4.4 *UJ*	8.6 *UJ*	8.6 *UJ*
SD39	river	6/24/1998	SD39	B	0	0	4.7 *UJ*	9.1 *UJ*	4.7 *UJ*	4.7 *UJ*	9.1 *UJ*	9.1 *UJ*
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	38 *UJ*	73 *UJ*	38 *UJ*	38 *UJ*	74 *UJ*	73 *UJ*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	0.25 *J*	6.1 *U*	1.4 *J*	3.2 *U*	6.1 *U*	6.1 *U*
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	3.2 *UJ*	6.3 *U*	3.2 *U*	3.2 *U*	6.3 *U*	6.3 *U*
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	3.1 *UJ*	6.0 *U*	3.2 *JN*	3.1 *U*	6.0 *U*	6.0 *U*
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	4.2 *UJ*	8.1 *UJ*	4.2 *UJ*	4.2 *UJ*	8.1 *UJ*	8.1 *UJ*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	3.0 *UJ*	5.7 *U*	3.0 *U*	3.0 *U*	5.7 *U*	5.7 *U*
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	3.1 *UJ*	6.1 *U*	3.1 *U*	3.1 *U*	6.1 *U*	6.1 *U*
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	3.3 *UJ*	13 *JN*	7.6 *J*	4.9 *R*	6.4 *U*	6.4 *U*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	7.6 *UJ*	15 *UJ*	7.6 *UJ*	7.6 *UJ*	380 *J*	15 *UJ*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	3.0 *U*	5.8 *U*	3.0 *U*	3.0 *U*	5.8 *U*	5.8 *U*
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	3.3 *U*	6.4 *U*	3.3 *U*	3.3 *U*	6.4 *U*	6.4 *U*
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	2.8 *U*	5.5 *U*	2.8 *U*	2.8 *U*	5.5 *U*	5.5 *U*
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	0.54 *J*	7.1 *UJ*	3.6 *UJ*	3.6 *UJ*	7.1 *UJ*	7.1 *UJ*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	2.9 *U*	5.6 *U*	2.9 *U*	2.9 *U*	5.6 *U*	5.6 *U*
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	2.8 *U*	5.4 *U*	2.8 *U*	2.8 *U*	5.4 *U*	5.4 *U*
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	2.8 *U*	5.4 *U*	2.8 *U*	2.8 *U*	5.4 *U*	5.4 *U*
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	3.1 *U*	5.9 *U*	3.1 *U*	3.1 *U*	5.9 *U*	5.9 *U*
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	2.7 *U*	5.2 *U*	2.7 *U*	2.7 *U*	5.2 *U*	5.2 *U*
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	2.9 *U*	5.7 *U*	2.9 *U*	2.9 *U*	5.7 *U*	5.7 *U*
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	2.9 *U*	5.6 *U*	2.9 *U*	2.9 *U*	5.6 *U*	5.6 *U*
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	3.5 *UJ*	6.7 *UJ*	3.5 *UJ*	3.5 *UJ*	6.7 *UJ*	6.7 *UJ*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	2.9 *U*	5.6 *U*	2.9 *U*	2.9 *U*	5.6 *U*	5.6 *U*
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	2.9 *U*	5.6 *U*	2.9 *U*	2.9 *U*	5.6 *U*	5.6 *U*
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	3.0 *U*	5.7 *U*	3.0 *U*	0.50 *J*	5.7 *U*	5.7 *U*
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	2.6 *U*	5.0 *U*	0.38 *J*	2.6 *U*	5.0 *U*	5.0 *U*
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	2.9 *U*	5.7 *U*	2.9 *U*	2.9 *U*	5.7 *U*	5.7 *U*
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	2.8 *U*	5.4 *U*	2.8 *U*	2.8 *U*	5.4 *U*	5.4 *U*
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	2.6 *U*	5.1 *U*	2.6 *U*	2.6 *U*	5.1 *U*	5.1 *U*
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	8.2 *UJ*	16 *UJ*	8.2 *UJ*	8.2 *UJ*	16 *UJ*	16 *UJ*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	3.3 *U*	6.4 *U*	3.3 *U*	3.3 *U*	6.4 *U*	6.4 *U*

Table E-3. Pesticide/PCB results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	alpha-Hexachloro-cyclohexane (µg/kg dry)	beta-Endosulfan (µg/kg dry)	beta-Hexachloro cyclohexane (µg/kg dry)	delta-Hexachloro-cyclohexane (µg/kg dry)	Dieldrin (µg/kg dry)	Endosulfan sulfate (µg/kg dry)
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	3.2 *U*	6.2 *U*	3.2 *U*	3.2 *U*	6.2 *U*	6.2 *U*
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	4.3 *UJ*	8.3 *UJ*	4.3 *UJ*	4.3 *UJ*	8.3 *UJ*	8.3 *UJ*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	11 *UJ*	20 *UJ*	11 *UJ*	11 *UJ*	20 *UJ*	20 *UJ*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	3.5 *UJ*	6.7 *UJ*	3.5 *UJ*	3.5 *UJ*	6.7 *UJ*	6.7 *UJ*
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	3.0 *U*	5.8 *U*	3.0 *U*	3.0 *U*	5.8 *U*	5.8 *U*
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	8.4 *UJ*	16 *UJ*	8.4 *UJ*	8.4 *UJ*	6.8 *J*	16 *UJ*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	0.25 *J*	7.4 *UJ*	3.8 *UJ*	3.8 *UJ*	7.4 *UJ*	7.4 *UJ*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	2.9 *U*	5.5 *U*	2.9 *U*	2.9 *U*	5.5 *U*	5.5 *U*
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	2.9 *U*	5.7 *U*	2.9 *U*	2.9 *U*	5.7 *U*	5.7 *U*
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	0.79 *J*	9.9 *UJ*	5.1 *UJ*	5.1 *UJ*	9.9 *UJ*	9.9 *UJ*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	2.1 *U*	4.1 *U*	2.1 *U*	2.1 *U*	4.1 *U*	4.1 *U*
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	3.4 *UJ*	6.7 *UJ*	3.4 *UJ*	3.4 *UJ*	6.7 *UJ*	6.7 *UJ*
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	3.1 *U*	6.1 *U*	3.1 *U*	3.1 *U*	6.1 *U*	6.1 *U*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	2.9 *U*	5.6 *U*	2.9 *U*	2.9 *U*	5.6 *U*	5.6 *U*
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	2.6 *U*	5.1 *U*	2.6 *U*	2.6 *U*	2.8 *J*	5.1 *U*
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	2.7 *U*	5.3 *U*	2.7 *U*	2.7 *U*	5.3 *U*	5.3 *U*
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	2.8 *U*	5.5 *U*	2.8 *U*	2.8 *U*	5.5 *U*	5.5 *U*
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	2.9 *U*	5.6 *U*	2.9 *U*	2.9 *U*	5.6 *U*	5.6 *U*

Note:

Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
N - tentatively identified
U - undetected at detection limit shown
R - rejected

Table E-3. Pesticide/PCB results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Endrin (µg/kg dry)	Endrin aldehyde (µg/kg dry)	Endrin ketone (µg/kg dry)	gamma-Chlordane (µg/kg dry)	gamma-Hexachloro-cyclohexane (µg/kg dry)	Heptachlor (µg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	6.1 *UJ*	6.1 *UJ*	6.1 *UJ*	3.1 *UJ*	3.1 *UJ*	3.1 *UJ*
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	6.6 *U*	6.6 *U*	6.6 *U*	3.4 *U*	3.4 *U*	3.4 *U*
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	6.3 *U*	6.3 *U*	6.3 *U*	3.2 *U*	3.2 *U*	3.2 *U*
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	6.6 *U*	6.6 *U*	6.6 *U*	3.4 *U*	3.4 *U*	3.4 *U*
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	4.2 *R*	0.49 *J*	4.2 *R*	0.83 *J*	1.7 *J*	2.2 *R*
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	5.0 *U*	3.0 *J*	5.0 *U*	2.6 *U*	2.6 *U*	2.6 *U*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	4.3 *U*	4.3 *U*	4.3 *U*	2.2 *U*	2.2 *U*	2.2 *U*
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	5.3 *U*	1.8 *J*	5.3 *U*	2.7 *U*	2.7 *U*	2.7 *U*
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	7.3 *UJ*	7.3 *UJ*	7.3 *UJ*	6.2 *J*	3.8 *UJ*	4.7 *JN*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	7.5 *J*	7.5 *JN*	7.5 *UJ*	3.9 *R*	3.9 *J*	3.9 *J*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	7.1 *UJ*	7.1 *UJ*	7.1 *UJ*	3.6 *UJ*	3.6 *UJ*	3.6 *UJ*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	7.9 *J*	7.9 *UJ*	7.9 *UJ*	4.1 *UJ*	4.1 *J*	4.1 *J*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	16 *UJ*	24 *J*	16 *UJ*	8.0 *UJ*	8.0 *UJ*	8.0 *UJ*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	7.7 *UJ*	5.0 *J*	7.7 *UJ*	14 *J*	5.4 *R*	4.0 *UJ*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	7.2 *UJ*	7.2 *UJ*	7.2 *UJ*	3.7 *UJ*	5.3 *R*	3.7 *UJ*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	16 *UJ*	16 *UJ*	16 *UJ*	8.1 *UJ*	8.1 *UJ*	8.1 *UJ*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	5.9 *U*	5.9 *U*	5.9 *U*	3.0 *U*	3.0 *UJ*	3.0 *U*
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	7.0 *UJ*	7.0 *UJ*	7.0 *UJ*	3.6 *UJ*	3.6 *UJ*	3.6 *UJ*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	6.6 *UJ*	6.6 *UJ*	6.6 *UJ*	3.4 *UJ*	3.4 *UJ*	1.2 *J*
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	7.3 *UJ*	7.3 *UJ*	7.3 *UJ*	3.7 *UJ*	3.7 *UJ*	3.7 *UJ*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	8.7 *UJ*	8.7 *UJ*	8.7 *UJ*	15 *JN*	4.5 *UJ*	4.5 *UJ*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	8.1 *UJ*	8.1 *UJ*	8.1 *UJ*	4.1 *UJ*	4.1 *UJ*	4.1 *UJ*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	7.3 *UJ*	7.3 *UJ*	7.3 *UJ*	3.7 *UJ*	0.27 *J*	3.7 *UJ*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	9.7 *UJ*	9.7 *UJ*	9.7 *UJ*	7.2 *J*	5.0 *UJ*	5.0 *UJ*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	12 *UJ*	12 *UJ*	12 *UJ*	7.6 *JN*	6.0 *UJ*	6.0 *UJ*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	7.0 *UJ*	7.0 *UJ*	7.0 *UJ*	3.6 *UJ*	4.0 *JN*	3.6 *UJ*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	6.6 *UJ*	6.6 *UJ*	6.6 *UJ*	3.4 *UJ*	3.4 *UJ*	3.4 *UJ*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	7.8 *UJ*	7.8 *UJ*	7.8 *UJ*	4.0 *UJ*	5.6 *R*	4.0 *UJ*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	13 *UJ*	13 *UJ*	13 *UJ*	13 *UJ*	6.5 *UJ*	6.5 *UJ*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	8.0 *UJ*	8.0 *UJ*	8.0 *UJ*	6.0 *J*	12 *R*	4.1 *UJ*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	6.7 *UJ*	6.7 *UJ*	6.7 *UJ*	3.4 *UJ*	7.1 *J*	3.4 *UJ*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	8.0 *UJ*	8.0 *UJ*	8.0 *UJ*	4.7 *R*	4.1 *UJ*	4.1 *UJ*
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6	8.3 *UJ*	8.3 *UJ*	8.3 *UJ*	18 *J*	4.3 *UJ*	4.3 *UJ*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	7.8 *UJ*	7.8 *UJ*	7.8 *UJ*	11 *JN*	4.0 *UJ*	4.0 *UJ*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	7.7 *UJ*	2.6 *J*	7.7 *UJ*	11 *J*	4.0 *UJ*	4.0 *UJ*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	8.2 *UJ*	8.2 *UJ*	8.2 *UJ*	9.9 *J*	4.2 *UJ*	4.2 *UJ*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	8.6 *UJ*	8.6 *UJ*	8.6 *UJ*	4.4 *UJ*	4.4 *UJ*	4.4 *UJ*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	7.3 *UJ*	7.3 *UJ*	7.3 *UJ*	3.8 *UJ*	3.8 *UJ*	3.8 *UJ*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	6.7 *UJ*	6.7 *UJ*	6.7 *UJ*	3.5 *UJ*	3.5 *UJ*	3.5 *UJ*

Table E-3. Pesticide/PCB results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Endrin (µg/kg dry)	Endrin aldehyde (µg/kg dry)	Endrin ketone (µg/kg dry)	gamma-Chlordane (µg/kg dry)	gamma-Hexachloro-cyclohexane (µg/kg dry)	Heptachlor (µg/kg dry)
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	15 *UJ*	18 *J*	15 *UJ*	7.7 *UJ*	7.7 *UJ*	7.7 *UJ*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	9.2 *R*	9.2 *R*	9.2 *R*	4.7 *UJ*	4.7 *UJ*	4.7 *R*
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	5.9 *U*	5.9 *U*	5.9 *U*	3.0 *U*	3.0 *UJ*	3.0 *U*
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	6.5 *U*	6.5 *U*	6.5 *U*	3.3 *U*	3.3 *UJ*	3.3 *U*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	7.5 *R*	7.5 *UJ*	7.5 *R*	3.9 *UJ*	3.9 *UJ*	3.9 *R*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	8.0 *UJ*	8.0 *UJ*	8.0 *UJ*	0.32 *J*	4.1 *UJ*	4.1 *UJ*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	5.9 *U*	5.9 *U*	5.9 *U*	3.1 *U*	3.1 *UJ*	3.1 *U*
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	1.9 *U*	6.0 *U*	6.0 *U*	3.1 *U*	3.1 *UJ*	3.1 *UJ*
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	6.4 *U*	6.4 *U*	6.4 *U*	3.3 *U*	1.1 *J*	3.3 *U*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	6.6 *U*	6.6 *U*	6.6 *U*	1.5 *J*	3.4 *UJ*	3.4 *U*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	5.8 *U*	5.8 *U*	0.086 *J*	3.0 *U*	3.0 *UJ*	3.0 *U*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	5.9 *U*	5.9 *U*	5.9 *U*	3.0 *U*	3.0 *UJ*	3.0 *U*
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	6.7 *UJ*	6.7 *UJ*	6.7 *UJ*	3.5 *UJ*	3.5 *UJ*	3.5 *UJ*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	8.3 *UJ*	4.3 *UJ*	8.3 *UJ*	4.3 *UJ*	2.8 *J*	4.3 *UJ*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	6.1 *U*	6.1 *U*	6.1 *U*	3.2 *U*	3.2 *U*	3.2 *U*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	6.0 *U*	6.0 *U*	6.0 *U*	3.1 *U*	3.1 *U*	3.1 *U*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	7.0 *UJ*	7.0 *UJ*	7.0 *UJ*	3.6 *UJ*	3.6 *UJ*	3.6 *UJ*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	8.7 *UJ*	8.7 *UJ*	8.7 *UJ*	11 *JN*	4.5 *UJ*	4.5 *UJ*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	7.5 *UJ*	7.5 *UJ*	7.5 *UJ*	16 *JN*	3.9 *UJ*	3.9 *UJ*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	8.2 *UJ*	8.2 *UJ*	17 *J*	13 *R*	5.8 *R*	4.2 *UJ*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	8.2 *UJ*	8.2 *UJ*	8.2 *UJ*	5.1 *R*	4.2 *UJ*	4.2 *UJ*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	19 *UJ*	19 *UJ*	19 *UJ*	3.4 *J*	10 *UJ*	10 *UJ*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	5.0 *U*	0.63 *J*	5.0 *U*	2.6 *U*	2.6 *U*	2.6 *U*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	5.5 *U*	5.5 *U*	5.5 *U*	2.8 *U*	2.8 *U*	2.8 *U*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	7.2 *UJ*	1.9 *J*	7.2 *UJ*	3.8 *J*	3.7 *UJ*	3.7 *UJ*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	9.2 *UJ*	9.2 *UJ*	9.2 *UJ*	4.7 *UJ*	4.7 *UJ*	4.7 *UJ*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	4.5 *U*	4.5 *U*	4.5 *U*	2.3 *U*	2.3 *U*	2.3 *U*
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	4.5 *U*	4.5 *U*	4.5 *U*	2.3 *U*	2.3 *U*	2.3 *U*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	7.2 *UJ*	7.2 *UJ*	7.2 *UJ*	3.7 *UJ*	5.3 *R*	3.7 *UJ*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	5.6 *U*	1.3 *J*	5.6 *U*	2.9 *U*	2.9 *U*	2.9 *U*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	6.1 *U*	6.1 *U*	6.1 *U*	3.1 *U*	3.1 *UJ*	3.1 *U*
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	5.5 *U*	5.5 *U*	1.2 *J*	2.8 *U*	2.8 *UJ*	2.8 *U*
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	5.9 *U*	5.9 *U*	5.9 *U*	3.0 *U*	3.0 *UJ*	3.0 *U*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	7.0 *UJ*	2.8 *J*	7.0 *UJ*	3.6 *UJ*	3.6 *UJ*	3.6 *UJ*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	5.7 *U*	5.7 *U*	5.7 *U*	2.9 *U*	2.9 *UJ*	2.9 *U*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	5.9 *U*	5.9 *U*	5.9 *U*	3.0 *U*	3.0 *UJ*	3.0 *U*
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	6.1 *U*	6.1 *U*	6.1 *U*	3.1 *U*	3.1 *UJ*	3.1 *U*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	8.9 *UJ*	8.9 *UJ*	8.9 *UJ*	4.6 *UJ*	4.6 *UJ*	4.6 *UJ*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	8.0 *UJ*	8.0 *UJ*	8.0 *UJ*	4.1 *UJ*	4.1 *UJ*	4.1 *UJ*

Table E-3. Pesticide/PCB results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Endrin (µg/kg dry)	Endrin aldehyde (µg/kg dry)	Endrin ketone (µg/kg dry)	gamma-Chlordane (µg/kg dry)	gamma-Hexachloro-cyclohexane (µg/kg dry)	Heptachlor (µg/kg dry)
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	7.5 *UJ*	7.5 *UJ*	7.5 *UJ*	3.9 *UJ*	3.9 *UJ*	3.9 *UJ*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	7.5 *UJ*	4.1 *J*	7.5 *UJ*	3.9 *UJ*	3.9 *UJ*	3.9 *UJ*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	8.9 *UJ*	8.9 *UJ*	8.9 *UJ*	4.6 *UJ*	4.6 *UJ*	4.6 *UJ*
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	8.0 *UJ*	8.0 *UJ*	8.0 *UJ*	4.1 *UJ*	4.1 *UJ*	4.1 *UJ*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	7.5 *UJ*	7.5 *UJ*	7.5 *UJ*	3.9 *UJ*	3.9 *UJ*	3.9 *UJ*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	7.3 *UJ*	7.3 *UJ*	7.3 *UJ*	6.4 *J*	3.8 *UJ*	3.8 *UJ*
SD01	Ruplnd	10/23/1997	SD01	0	0	0	26 *U*	26 *U*	26 *U*	13 *U*	13 *U*	1.7 *J*
SD02	Ruplnd	10/24/1997	SD02	0	0	0	4.7 *U*	4.7 *U*	4.7 *U*	2.4 *U*	2.4 *U*	2.4 *U*
SD03	upland	10/23/1997	SD03	0	0	0	9.7 *J*	58 *U*	58 *U*	30 *U*	30 *U*	30 *U*
SD04	upland	10/24/1997	SD04	0	0	0	0.81 *J*	9.1 *JN*	6.0 *U*	3.1 *U*	3.1 *U*	1.1 *J*
SD05	upland	10/23/1997	SD05	0	0	0	500 *U*	500 *U*	500 *U*	260 *U*	260 *U*	220 *J*
SD06	upland	10/23/1997	SD06	0	0	0	46 *J*	180 *UJ*	180 *UJ*	94 *UJ*	94 *UJ*	94 *UJ*
SD07	upland	10/23/1997	SD07	0	0	0	210 *UJ*	210 *UJ*	210 *UJ*	110 *UJ*	110 *UJ*	110 *UJ*
SD08	upland	10/23/1997	SD08	0	0	0	52 *U*	52 *U*	52 *U*	0 *R*	26 *U*	86 *JN*
SD09	upland	10/28/1997	SD09	0	0	0	8.2 *UJ*	8.2 *UJ*	8.2 *UJ*	0 *R*	12 *J*	4.2 *UJ*
SD10	upland	10/28/1997	SD10	0	0	0	13 *UJ*	0 *R*	13 *UJ*	0 *R*	6.5 *UJ*	6.5 *UJ*
SD11	upland	10/28/1997	SD11	0	0	0	1,100 *UJ*	1,100 *UJ*	1,100 *UJ*	590 *UJ*	590 *UJ*	590 *UJ*
SD12	upland	10/28/1997	SD12	0	0	0	11 *UJ*	11 *UJ*	11 *UJ*	0 *R*	5.5 *UJ*	5.5 *UJ*
SD13	upland	10/27/1997	SD13	0	0	0	5.2 *U*	5.2 *U*	5.2 *U*	30	2.7 *U*	3.8 *U*
SD14	upland	10/27/1997	SD14	0	0	0	6.2 *U*	6.2 *U*	6.2 *U*	3.2 *U*	3.2 *U*	3.2 *U*
SD15	upland	10/24/1997	SD15	0	0	0	0 *R*	0 *R*	0 *R*	0 *R*	0 *R*	0 *R*
SD16	upland	10/27/1997	SD16	0	0	0	5.5 *U*	5.5 *U*	5.5 *U*	2.8 *U*	2.8 *U*	12
SD17	upland	10/27/1997	SD17	0	0	0	6.4 *U*	13	6.4 *U*	14	1.5 *J*	3.3 *U*
SD18	upland	10/29/1997	SD18	0	0	0	6.0 *UJ*	6.0 *UJ*	6.0 *UJ*	21 *J*	3.1 *UJ*	3.1 *UJ*
SD19	upland	10/24/1997	SD19	0	0	0	6.3 *J*	4.0 *U*	4.0 *U*	2.1 *U*	2.1 *U*	2.1 *U*
SD20	upland	10/24/1997	SD20	A	0	0	76 *U*	0 *R*	76 *U*	39 *U*	39 *U*	24 *J*
SD20	upland	10/24/1997	SD20	B	0	0	0 *R*	0 *R*	19 *U*	0 *R*	9.7 *U*	17
SD21	Ruplnd	10/24/1997	SD21	0	0	0	3.7 *U*	3.7 *U*	3.7 *U*	1.9 *U*	1.9 *U*	1.7 *J*
SD22	upland	10/24/1997	SD22	0	0	0	10 *JN*	0 *R*	4.0 *U*	0 *R*	2.1 *U*	2.1 *U*
SD23	upland	10/24/1997	SD23	0	0	0	3.8 *U*	3.8 *U*	3.8 *U*	1.9 *U*	1.9 *U*	1.9 *U*
SD24	river	10/27/1997	SD24	0	0	0	9.7 *UJ*	9.7 *UJ*	2.2 *J*	5.0 *UJ*	5.0 *UJ*	5.0 *UJ*
SD25	river	10/29/1997	SD25	0	0	0	10 *UJ*	10 *UJ*	10 *UJ*	5.2 *UJ*	5.2 *UJ*	5.2 *UJ*
SD26	marsh	10/29/1997	SD26	0	0	0	19 *UJ*	19 *UJ*	19 *UJ*	10 *UJ*	10 *UJ*	0.96 *J*
SD27	river	10/30/1997	SD27	0	0	0	13 *UJ*	13 *UJ*	13 *UJ*	7.7 *JN*	6.5 *UJ*	6.5 *UJ*
SD28	upland	10/28/1997	SD28	0	0	0	9.4 *UJ*	9.4 *UJ*	9.4 *UJ*	3.5 *J*	4.8 *UJ*	4.8 *UJ*
SD29	upland	10/27/1997	SD29	0	0	0	4.8 *U*	4.8 *U*	4.8 *U*	2.5 *U*	2.5 *U*	2.5 *U*
SD30	upland	10/29/1997	SD30	0	0	0	4.8 *UJ*	4.8 *UJ*	4.8 *UJ*	2.3 *J*	2.5 *UJ*	2.5 *UJ*
SD31	river	10/30/1997	SD31	0	0	0	10 *UJ*	10 *UJ*	10 *UJ*	5.2 *UJ*	5.2 *UJ*	5.2 *UJ*
SD32	upland	10/28/1997	SD32	0	0	0	7.0 *UJ*	7.0 *UJ*	7.0 *UJ*	3.6 *UJ*	3.6 *UJ*	3.6 *UJ*

Table E-3. Pesticide/PCB results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Endrin (µg/kg dry)	Endrin aldehyde (µg/kg dry)	Endrin ketone (µg/kg dry)	gamma-Chlordane (µg/kg dry)	gamma-Hexachloro-cyclohexane (µg/kg dry)	Heptachlor (µg/kg dry)
SD33	marsh	10/28/1997	SD33	0	0	0	8.5 *UJ*	8.5 *UJ*	8.5 *UJ*	4.4 *UJ*	4.4 *UJ*	4.4 *UJ*
SD34	upland	10/30/1997	SD34	0	0	0	5.8 *U*	5.8 *U*	5.8 *U*	3.2 *J*	3.0 *U*	3.0 *U*
SD35	marsh	10/30/1997	SD35	0	0	0	7.5 *UJ*	7.5 *UJ*	7.5 *UJ*	3.9 *UJ*	3.9 *UJ*	3.9 *UJ*
SD36	marsh	10/30/1997	SD36	0	0	0	4.8 *U*	4.8 *U*	4.8 *U*	2.8 *JN*	2.5 *U*	2.5 *U*
SD37	marsh	10/30/1997	SD37	A	0	0	3.9 *U*	3.9 *U*	3.9 *U*	2.0 *U*	2.0 *U*	2.0 *U*
SD37	marsh	10/30/1997	SD37	B	0	0	4.0 *U*	4.0 *U*	4.0 *U*	2.0 *U*	2.0 *U*	2.0 *U*
SD38	river	6/24/1998	SD38	0	0	0	9.9 *UJ*	9.9 *UJ*	9.9 *UJ*	36 *J*	5.1 *UJ*	0 *R*
SD39	river	6/24/1998	SD39	A	0	0	8.6 *UJ*	8.6 *UJ*	8.6 *UJ*	4.4 *UJ*	4.4 *UJ*	4.4 *UJ*
SD39	river	6/24/1998	SD39	B	0	0	9.1 *UJ*	9.1 *UJ*	9.1 *UJ*	4.7 *UJ*	4.7 *UJ*	4.7 *UJ*
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	150 *J*	73 *UJ*	73 *UJ*	200 *R*	38 *UJ*	38 *UJ*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	6.1 *U*	6.1 *U*	6.1 *U*	3.2 *U*	3.2 *U*	3.2 *U*
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	6.3 *U*	6.3 *U*	6.3 *U*	3.2 *U*	3.2 *U*	3.2 *U*
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	9.3 *J*	6.0 *U*	6.0 *U*	13 *R*	3.1 *U*	10 *R*
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	54 *J*	8.1 *UJ*	120 *J*	61 *R*	4.2 *UJ*	4.2 *UJ*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	5.7 *U*	5.7 *U*	5.7 *U*	3.0 *U*	3.0 *U*	3.0 *U*
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	6.1 *U*	6.1 *U*	6.1 *U*	3.1 *U*	3.1 *U*	3.1 *U*
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	63 *R*	6.4 *U*	35 *R*	21 *R*	3.3 *U*	20 *R*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	76 *J*	15 *UJ*	15 *UJ*	100 *R*	7.6 *UJ*	210 *R*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	5.8 *U*	5.8 *U*	5.8 *U*	3.0 *U*	3.0 *U*	3.0 *U*
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	6.4 *U*	6.4 *U*	6.4 *U*	3.3 *U*	3.3 *U*	3.3 *U*
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	5.5 *U*	5.5 *U*	5.5 *U*	3.0 *R*	2.8 *U*	2.8 *U*
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	8.8 *J*	7.1 *UJ*	7.1 *UJ*	12 *R*	3.6 *UJ*	5.1 *R*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	5.6 *U*	5.6 *U*	5.6 *U*	2.9 *U*	2.9 *U*	2.9 *U*
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	5.4 *U*	5.4 *U*	5.4 *U*	2.8 *U*	2.8 *U*	2.8 *U*
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	5.4 *U*	5.4 *U*	5.4 *U*	2.8 *U*	2.8 *U*	2.8 *U*
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	5.9 *U*	5.9 *U*	36	3.1 *U*	3.1 *U*	3.1 *U*
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	5.2 *U*	5.2 *U*	5.2 *U*	2.7 *U*	2.7 *U*	2.7 *U*
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	5.7 *U*	5.7 *U*	5.7 *U*	2.9 *U*	2.9 *U*	2.9 *U*
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	5.6 *U*	5.6 *U*	5.6 *U*	2.9 *U*	2.9 *U*	2.9 *U*
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	7.7 *J*	6.7 *UJ*	4.5 *J*	7.7 *R*	3.5 *UJ*	3.5 *UJ*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	5.6 *U*	5.6 *U*	5.6 *U*	2.9 *U*	2.9 *U*	2.9 *U*
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	5.6 *U*	5.6 *U*	5.6 *U*	2.9 *U*	2.9 *U*	2.9 *U*
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	5.7 *U*	5.7 *U*	5.7 *U*	3.0 *U*	3.0 *U*	3.0 *U*
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	7.1	5.0 *U*	9.1	2.6 *U*	2.6 *U*	2.6 *U*
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	5.7 *U*	5.7 *U*	5.7 *U*	2.9 *U*	2.9 *U*	2.9 *U*
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	5.4 *U*	5.4 *U*	0.75 *J*	2.8 *U*	2.8 *U*	2.8 *U*
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	5.1 *U*	5.1 *U*	3.4	0.22 *J*	2.6 *U*	2.6 *U*
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	16 *UJ*	16 *UJ*	16 *UJ*	8.2 *UJ*	8.2 *UJ*	8.2 *UJ*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	6.4 *U*	6.4 *U*	6.4 *U*	3.3 *U*	3.3 *U*	3.3 *U*

Table E-3. Pesticide/PCB results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Endrin (µg/kg dry)	Endrin aldehyde (µg/kg dry)	Endrin ketone (µg/kg dry)	gamma-Chlordane (µg/kg dry)	gamma-Hexachloro-cyclohexane (µg/kg dry)	Heptachlor (µg/kg dry)
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	6.2 *U*	6.2 *U*	6.2 *U*	3.2 *U*	3.2 *U*	3.2 *U*
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	8.3 *UJ*	8.3 *UJ*	8.3 *UJ*	0.46 *J*	4.3 *UJ*	4.3 *UJ*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	20 *UJ*	20 *UJ*	20 *UJ*	11 *UJ*	11 *UJ*	11 *UJ*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	6.7 *UJ*	6.7 *UJ*	6.7 *UJ*	3.5 *UJ*	3.5 *UJ*	3.5 *UJ*
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	5.8 *U*	5.8 *U*	5.8 *U*	3.0 *U*	3.0 *U*	3.0 *U*
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	16 *UJ*	16 *UJ*	16 *UJ*	8.4 *UJ*	8.4 *UJ*	8.4 *UJ*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	7.4 *UJ*	7.4 *UJ*	3.7 *J*	3.8 *UJ*	3.8 *UJ*	3.8 *UJ*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	5.5 *U*	5.5 *U*	5.5 *U*	2.9 *U*	2.9 *U*	2.9 *U*
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	5.7 *U*	5.7 *U*	5.7 *U*	2.9 *U*	2.9 *U*	2.9 *U*
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	9.9 *UJ*	9.9 *UJ*	9.9 *UJ*	5.1 *UJ*	5.1 *UJ*	5.1 *UJ*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	5.4 *J*	4.1 *U*	9.1 *J*	2.1 *U*	0.19	2.1 *U*
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	6.7 *UJ*	6.7 *UJ*	6.7 *UJ*	3.4 *UJ*	3.4 *UJ*	3.4 *UJ*
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	6.1 *U*	6.1 *U*	6.1 *U*	3.1 *U*	3.1 *U*	3.1 *U*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	6.7 *J*	5.6 *U*	18	2.9 *U*	2.9 *U*	2.9 *U*
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	5.1 *U*	5.1 *U*	5.1 *U*	2.6 *U*	2.6 *U*	2.6 *U*
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	5.3 *U*	5.3 *U*	5.3 *U*	2.7 *U*	2.7 *U*	2.7 *U*
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	5.5 *U*	5.5 *U*	5.5 *U*	2.8 *U*	2.8 *U*	2.8 *U*
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	5.6 *U*	5.6 *U*	5.6 *U*	2.9 *U*	2.9 *U*	2.9 *U*

Note:
Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
N - tentatively identified
U - undetected at detection limit shown
R - rejected

Table E-3. Pesticide/PCB results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Heptachlor epoxide (µg/kg dry)	Methoxychlor (µg/kg dry)	Toxaphene (µg/kg dry)	Aroclor® 1016 (µg/kg dry)	Aroclor® 1221 (µg/kg dry)	Aroclor® 1232 (µg/kg dry)	Aroclor® 1242 (µg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	3.1 *UJ*	31 *UJ*	310 *UJ*	61 *UJ*	120 *UJ*	61 *UJ*	61 *UJ*
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	3.4 *U*	34 *UJ*	340 *U*	66 *U*	130 *U*	66 *U*	66 *U*
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	3.2 *U*	24 *J*	320 *U*	63 *U*	130 *U*	63 *U*	63 *U*
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	3.4 *U*	34 *UJ*	340 *U*	66 *U*	130 *U*	66 *U*	66 *U*
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	2.2 *R*	22 *R*	220 *R*	42 *R*	85 *R*	42 *R*	42 *R*
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	2.6 *U*	26 *U*	260 *U*	50 *U*	100 *U*	50 *U*	50 *U*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	2.2 *U*	22 *U*	220 *U*	43 *U*	88 *U*	43 *U*	43 *U*
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	2.7 *U*	27 *U*	270 *U*	53 *U*	110 *U*	53 *U*	53 *U*
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	7.9 *JN*	17 *J*	380 *UJ*	73 *UJ*	150 *UJ*	73 *UJ*	73 *UJ*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	3.9 *R*	39 *UJ*	390 *UJ*	75 *UJ*	150 *UJ*	75 *UJ*	75 *UJ*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	16 *JN*	36 *UJ*	360 *UJ*	71 *UJ*	140 *UJ*	71 *UJ*	71 *UJ*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	4.1 *R*	41 *UJ*	410 *UJ*	79 *UJ*	160 *UJ*	79 *UJ*	79 *UJ*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	8.0 *UJ*	80 *UJ*	800 *UJ*	160 *UJ*	320 *UJ*	160 *UJ*	160 *UJ*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	4.0 *UJ*	40 *UJ*	400 *UJ*	77 *UJ*	160 *UJ*	77 *UJ*	77 *UJ*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	3.7 *UJ*	0.58 *J*	370 *UJ*	72 *UJ*	150 *UJ*	72 *UJ*	72 *UJ*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	8.1 *UJ*	81 *UJ*	810 *UJ*	160 *UJ*	320 *UJ*	160 *UJ*	160 *UJ*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	3.6 *R*	30 *U*	300 *U*	59 *U*	120 *U*	59 *U*	59 *U*
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	3.6 *UJ*	36 *UJ*	360 *UJ*	70 *UJ*	140 *UJ*	70 *UJ*	70 *UJ*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	3.4 *UJ*	34 *UJ*	340 *UJ*	66 *UJ*	130 *UJ*	66 *UJ*	66 *UJ*
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	3.7 *UJ*	37 *UJ*	370 *UJ*	73 *UJ*	150 *UJ*	73 *UJ*	73 *UJ*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	20 *JN*	28 *J*	450 *UJ*	87 *UJ*	180 *UJ*	87 *UJ*	87 *UJ*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	11 *R*	41 *UJ*	410 *UJ*	80 *UJ*	160 *UJ*	80 *UJ*	80 *UJ*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	12 *R*	7.1 *J*	370 *UJ*	73 *UJ*	150 *UJ*	73 *UJ*	73 *UJ*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	7.0 *R*	32 *J*	500 *UJ*	97 *UJ*	200 *UJ*	97 *UJ*	97 *UJ*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	6.0 *UJ*	60 *UJ*	600 *UJ*	120 *UJ*	230 *UJ*	120 *UJ*	120 *UJ*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	3.6 *UJ*	36 *UJ*	360 *UJ*	70 *UJ*	140 *UJ*	70 *UJ*	70 *UJ*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	3.4 *UJ*	34 *UJ*	340 *UJ*	66 *UJ*	130 *UJ*	66 *UJ*	66 *UJ*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	4.0 *UJ*	40 *UJ*	400 *UJ*	78 *UJ*	160 *UJ*	78 *UJ*	78 *UJ*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	6.5 *UJ*	65 *UJ*	650 *UJ*	130 *UJ*	260 *UJ*	130 *UJ*	130 *UJ*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	4.1 *UJ*	41 *UJ*	410 *UJ*	80 *UJ*	160 *UJ*	80 *UJ*	80 *UJ*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	3.4 *UJ*	34 *UJ*	340 *UJ*	67 *UJ*	140 *UJ*	67 *UJ*	67 *UJ*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	4.1 *UJ*	41 *UJ*	410 *UJ*	80 *UJ*	160 *UJ*	80 *UJ*	80 *UJ*
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6	4.3 *UJ*	43 *UJ*	430 *UJ*	83 *UJ*	170 *UJ*	83 *UJ*	83 *UJ*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	4.0 *UJ*	40 *UJ*	400 *UJ*	78 *UJ*	160 *UJ*	78 *UJ*	78 *UJ*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	4.0 *UJ*	40 *UJ*	400 *UJ*	77 *UJ*	160 *UJ*	77 *UJ*	77 *UJ*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	4.2 *UJ*	42 *UJ*	420 *UJ*	82 *UJ*	170 *UJ*	82 *UJ*	82 *UJ*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	4.4 *UJ*	44 *UJ*	440 *UJ*	86 *UJ*	170 *UJ*	86 *UJ*	86 *UJ*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	3.8 *UJ*	38 *UJ*	380 *UJ*	73 *UJ*	150 *UJ*	73 *UJ*	73 *UJ*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	3.5 *UJ*	35 *UJ*	350 *UJ*	67 *UJ*	140 *UJ*	67 *UJ*	67 *UJ*

Table E-3. Pesticide/PCB results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Heptachlor epoxide (µg/kg dry)	Methoxychlor (µg/kg dry)	Toxaphene (µg/kg dry)	Aroclor® 1016 (µg/kg dry)	Aroclor® 1221 (µg/kg dry)	Aroclor® 1232 (µg/kg dry)	Aroclor® 1242 (µg/kg dry)
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	7.7 *UJ*	77 *UJ*	770 *UJ*	150 *UJ*	300 *UJ*	150 *UJ*	150 *UJ*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	4.7 *R*	47 *R*	470 *R*	92 *R*	190 *R*	92 *R*	92 *R*
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	3.0 *U*	30 *U*	300 *U*	59 *U*	120 *U*	59 *U*	59 *U*
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	6.5 *U*	33 *U*	330 *U*	65 *U*	130 *U*	65 *U*	65 *U*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	3.9 *R*	39 *UJ*	390 *R*	75 *R*	150 *R*	75 *R*	75 *R*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	4.1 *UJ*	41 *UJ*	410 *UJ*	80 *UJ*	160 *UJ*	80 *UJ*	80 *UJ*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	3.1 *U*	31 *U*	310 *U*	59 *U*	120 *U*	59 *U*	59 *U*
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	3.1 *U*	31 *U*	310 *U*	60 *U*	120 *U*	60 *U*	60 *U*
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	3.3 *U*	33 *U*	330 *U*	64 *U*	130 *U*	64 *U*	64 *U*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	3.4 *U*	330	340 *U*	66 *U*	130 *U*	66 *U*	66 *U*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	3.0 *U*	30 *U*	300 *U*	58 *U*	120 *U*	58 *U*	58 *U*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	3.0 *U*	30 *U*	300 *U*	59 *U*	120 *U*	59 *U*	59 *U*
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	3.5 *UJ*	35 *UJ*	350 *UJ*	67 *UJ*	140 *UJ*	67 *UJ*	67 *UJ*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	4.3 *UJ*	43 *UJ*	430 *UJ*	83 *UJ*	170 *UJ*	83 *UJ*	83 *UJ*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	3.2 *U*	31 *U*	310 *U*	61 *U*	120 *U*	61 *U*	61 *U*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	3.1 *U*	31 *U*	310 *U*	60 *U*	120 *U*	60 *U*	60 *U*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	3.6 *UJ*	36 *UJ*	360 *UJ*	70 *UJ*	140 *UJ*	70 *UJ*	70 *UJ*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	4.5 *UJ*	45 *UJ*	450 *UJ*	87 *UJ*	180 *UJ*	87 *UJ*	87 *UJ*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	3.9 *UJ*	39 *UJ*	390 *UJ*	75 *UJ*	150 *UJ*	75 *UJ*	75 *UJ*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	4.2 *UJ*	42 *UJ*	420 *UJ*	82 *UJ*	170 *UJ*	82 *UJ*	82 *UJ*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	4.2 *UJ*	42 *UJ*	420 *UJ*	82 *UJ*	170 *UJ*	82 *UJ*	82 *UJ*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	10 *UJ*	100 *UJ*	1,000 *UJ*	190 *UJ*	390 *UJ*	190 *UJ*	190 *UJ*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	2.6 *U*	26 *U*	260 *U*	50 *U*	100 *U*	50 *U*	50 *U*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	2.8 *U*	28 *U*	280 *U*	55 *U*	110 *U*	55 *U*	55 *U*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	3.7 *UJ*	4.4 *J*	370 *UJ*	72 *UJ*	150 *UJ*	72 *UJ*	72 *UJ*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	4.7 *UJ*	47 *UJ*	470 *UJ*	92 *UJ*	190 *UJ*	92 *UJ*	92 *UJ*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	2.3 *U*	23 *U*	230 *U*	45 *U*	92 *U*	45 *U*	45 *U*
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	2.3 *U*	23 *U*	230 *U*	45 *U*	92 *U*	45 *U*	45 *U*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	3.7 *UJ*	37 *UJ*	370 *UJ*	72 *UJ*	150 *UJ*	72 *UJ*	72 *UJ*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	2.9 *U*	29 *U*	290 *U*	56 *U*	110 *U*	56 *U*	56 *U*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	3.1 *U*	31 *U*	310 *U*	61 *U*	120 *U*	61 *U*	61 *U*
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	2.8 *U*	28 *U*	280 *U*	55 *U*	110 *U*	55 *U*	55 *U*
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	3.0 *U*	30 *U*	300 *U*	59 *U*	120 *U*	59 *U*	59 *U*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	3.6 *UJ*	36 *UJ*	360 *UJ*	70 *UJ*	140 *UJ*	70 *UJ*	70 *UJ*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	2.9 *U*	29 *U*	290 *U*	57 *U*	120 *U*	57 *U*	57 *U*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	3.0 *U*	30 *U*	300 *U*	59 *U*	120 *U*	59 *U*	59 *U*
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	3.1 *U*	31 *U*	310 *U*	61 *U*	120 *U*	61 *U*	61 *U*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	4.6 *UJ*	2.1 *J*	460 *UJ*	89 *UJ*	180 *UJ*	89 *UJ*	89 *UJ*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	4.1 *UJ*	41 *UJ*	410 *UJ*	80 *UJ*	160 *UJ*	80 *UJ*	80 *UJ*

Table E-3. Pesticide/PCB results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Heptachlor epoxide (µg/kg dry)	Methoxychlor (µg/kg dry)	Toxaphene (µg/kg dry)	Aroclor® 1016 (µg/kg dry)	Aroclor® 1221 (µg/kg dry)	Aroclor® 1232 (µg/kg dry)	Aroclor® 1242 (µg/kg dry)
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	3.9 *UJ*	3.5 *J*	390 *UJ*	75 *UJ*	150 *UJ*	75 *UJ*	75 *UJ*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	3.9 *UJ*	39 *UJ*	390 *UJ*	75 *UJ*	150 *UJ*	75 *UJ*	75 *UJ*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	4.6 *UJ*	46 *UJ*	460 *UJ*	89 *UJ*	180 *UJ*	89 *UJ*	89 *UJ*
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	4.1 *UJ*	41 *UJ*	410 *UJ*	80 *UJ*	160 *UJ*	80 *UJ*	80 *UJ*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	3.9 *UJ*	39 *UJ*	390 *UJ*	75 *UJ*	150 *UJ*	75 *UJ*	75 *UJ*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	3.8 *UJ*	38 *UJ*	380 *UJ*	73 *UJ*	150 *UJ*	73 *UJ*	73 *UJ*
SD01	Ruplnd	10/23/1997	SD01	0	0	0	13 *U*	190	1,300 *U*	260 *U*	530 *U*	260 *U*	260 *U*
SD02	Ruplnd	10/24/1997	SD02	0	0	0	2.4 *U*	140	240 *U*	47 *U*	96 *U*	47 *U*	47 *U*
SD03	upland	10/23/1997	SD03	0	0	0	30 *U*	39,000	3,000 *U*	580 *U*	1,200 *U*	580 *U*	580 *U*
SD04	upland	10/24/1997	SD04	0	0	0	3.1 *U*	610	310 *U*	60 *U*	120 *U*	60 *U*	60 *U*
SD05	upland	10/23/1997	SD05	0	0	0	260 *U*	130,000	26,000 *U*	5,000 *U*	10,000 *U*	5,000 *U*	5,000 *U*
SD06	upland	10/23/1997	SD06	0	0	0	94 *UJ*	2,200 *J*	9,400 *UJ*	1,800 *UJ*	3,700 *UJ*	1,800 *UJ*	1,800 *UJ*
SD07	upland	10/23/1997	SD07	0	0	0	110 *UJ*	5,600 *J*	11,000 *UJ*	2,100 *UJ*	4,200 *UJ*	2,100 *UJ*	2,100 *UJ*
SD08	upland	10/23/1997	SD08	0	0	0	26 *U*	1,500	2,600 *U*	520 *U*	1,000 *U*	520 *U*	520 *U*
SD09	upland	10/28/1997	SD09	0	0	0	0 *R*	320 *J*	420 *UJ*	82 *UJ*	170 *UJ*	82 *UJ*	82 *UJ*
SD10	upland	10/28/1997	SD10	0	0	0	6.5 *UJ*	10,000 *J*	650 *UJ*	130 *UJ*	260 *UJ*	130 *UJ*	130 *UJ*
SD11	upland	10/28/1997	SD11	0	0	0	590 *UJ*	640,000 *J*	59,000 *UJ*	11,000 *UJ*	23,000 *UJ*	11,000 *UJ*	11,000 *UJ*
SD12	upland	10/28/1997	SD12	0	0	0	5.5 *UJ*	0 *R*	550 *UJ*	110 *UJ*	220 *UJ*	110 *UJ*	110 *UJ*
SD13	upland	10/27/1997	SD13	0	0	0	2.7 *U*	310	270 *U*	52 *U*	110 *U*	52 *U*	52 *U*
SD14	upland	10/27/1997	SD14	0	0	0	3.2 *U*	59 *J*	320 *U*	62 *U*	130 *U*	62 *U*	62 *U*
SD15	upland	10/24/1997	SD15	0	0	0	0 *R*	5.1 *J*	0 *R*	0 *R*	0 *R*	0 *R*	0 *R*
SD16	upland	10/27/1997	SD16	0	0	0	2.8 *U*	1,400 *J*	280 *U*	55 *U*	110 *U*	55 *U*	55 *U*
SD17	upland	10/27/1997	SD17	0	0	0	3.3 *U*	210	330 *U*	64 *U*	130 *U*	64 *U*	64 *U*
SD18	upland	10/29/1997	SD18	0	0	0	3.1 *UJ*	70 *J*	310 *UJ*	60 *UJ*	120 *UJ*	60 *UJ*	60 *UJ*
SD19	upland	10/24/1997	SD19	0	0	0	2.1 *U*	18 *J*	210 *U*	40 *U*	82 *U*	40 *U*	40 *U*
SD20	upland	10/24/1997	SD20	A	0	0	120 *JN*	7,600	3,900 *U*	760 *U*	1,500 *U*	760 *U*	760 *U*
SD20	upland	10/24/1997	SD20	B	0	0	120 *J*	96 *U*	960 *U*	190 *U*	380 *U*	190 *U*	190 *U*
SD21	Ruplnd	10/24/1997	SD21	0	0	0	1.9 *U*	52	190 *U*	37 *U*	75 *U*	37 *U*	37 *U*
SD22	upland	10/24/1997	SD22	0	0	0	3.0 *JN*	160 *JN*	210 *U*	40 *U*	81 *U*	40 *U*	40 *U*
SD23	upland	10/24/1997	SD23	0	0	0	0.27 *J*	120	190 *U*	38 *U*	76 *U*	38 *U*	38 *U*
SD24	river	10/27/1997	SD24	0	0	0	5.0 *UJ*	50 *UJ*	500 *UJ*	97 *UJ*	200 *UJ*	97 *UJ*	97 *UJ*
SD25	river	10/29/1997	SD25	0	0	0	5.2 *UJ*	290 *J*	520 *UJ*	100 *UJ*	200 *UJ*	100 *UJ*	100 *UJ*
SD26	marsh	10/29/1997	SD26	0	0	0	10 *UJ*	150 *J*	1,000 *UJ*	190 *UJ*	390 *UJ*	190 *UJ*	190 *UJ*
SD27	river	10/30/1997	SD27	0	0	0	6.5 *UJ*	65 *UJ*	650 *UJ*	130 *UJ*	260 *UJ*	130 *UJ*	130 *UJ*
SD28	upland	10/28/1997	SD28	0	0	0	4.8 *UJ*	48 *UJ*	480 *UJ*	94 *UJ*	190 *UJ*	94 *UJ*	94 *UJ*
SD29	upland	10/27/1997	SD29	0	0	0	2.5 *U*	120	250 *U*	48 *U*	98 *U*	48 *U*	48 *U*
SD30	upland	10/29/1997	SD30	0	0	0	0 *R*	41 *J*	250 *UJ*	48 *UJ*	97 *UJ*	48 *UJ*	48 *UJ*
SD31	river	10/30/1997	SD31	0	0	0	5.2 *UJ*	52 *UJ*	520 *UJ*	100 *UJ*	200 *UJ*	100 *UJ*	100 *UJ*
SD32	upland	10/28/1997	SD32	0	0	0	3.6 *UJ*	51 *J*	360 *UJ*	70 *UJ*	140 *UJ*	70 *UJ*	70 *UJ*

Table E-3. Pesticide/PCB results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Heptachlor epoxide (µg/kg dry)	Methoxychlor (µg/kg dry)	Toxaphene (µg/kg dry)	Aroclor® 1016 (µg/kg dry)	Aroclor® 1221 (µg/kg dry)	Aroclor® 1232 (µg/kg dry)	Aroclor® 1242 (µg/kg dry)
SD33	marsh	10/28/1997	SD33	0	0	0	4.4 *UJ*	44 *UJ*	440 *UJ*	85 *UJ*	170 *UJ*	85 *UJ*	85 *UJ*
SD34	upland	10/30/1997	SD34	0	0	0	3.0 *U*	30 *U*	300 *U*	58 *U*	120 *U*	58 *U*	58 *U*
SD35	marsh	10/30/1997	SD35	0	0	0	3.9 *UJ*	39 *UJ*	390 *UJ*	75 *UJ*	150 *UJ*	75 *UJ*	75 *UJ*
SD36	marsh	10/30/1997	SD36	0	0	0	2.5 *U*	29 *J*	250 *U*	48 *U*	98 *U*	48 *U*	48 *U*
SD37	marsh	10/30/1997	SD37	A	0	0	2.0 *U*	5.6 *J*	200 *U*	39 *U*	80 *U*	39 *U*	39 *U*
SD37	marsh	10/30/1997	SD37	B	0	0	2.0 *U*	20 *U*	200 *U*	40 *U*	81 *U*	40 *U*	40 *U*
SD38	river	6/24/1998	SD38	0	0	0	5.1 *UJ*	51 *UJ*	510 *UJ*	99 *UJ*	200 *UJ*	99 *UJ*	99 *UJ*
SD39	river	6/24/1998	SD39	A	0	0	4.4 *UJ*	44 *UJ*	440 *UJ*	86 *UJ*	170 *UJ*	86 *UJ*	86 *UJ*
SD39	river	6/24/1998	SD39	B	0	0	4.7 *UJ*	47 *UJ*	470 *UJ*	91 *UJ*	180 *UJ*	91 *UJ*	91 *UJ*
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	38 *UJ*	23,000 *J*	3,800 *UJ*	730 *UJ*	1,500 *UJ*	730 *UJ*	730 *UJ*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	12 *JN*	170 *J*	320 *U*	61 *U*	120 *U*	61 *U*	61 *U*
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	7.6	52 *J*	320 *U*	63 *U*	130 *U*	63 *U*	63 *U*
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	3.1 *U*	760 *J*	310 *U*	60 *U*	120 *U*	60 *U*	60 *U*
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	4.2 *UJ*	320 *J*	420 *UJ*	81 *UJ*	160 *UJ*	81 *UJ*	81 *UJ*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	3.0 *U*	30 *UJ*	300 *U*	57 *U*	120 *U*	57 *U*	57 *U*
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	3.1 *U*	31 *UJ*	310 *U*	61 *U*	120 *U*	61 *U*	61 *U*
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	3.3 *U*	260 *J*	330 *U*	64 *U*	130 *U*	64 *U*	64 *U*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	580 *J*	330 *J*	760 *UJ*	150 *UJ*	300 *UJ*	150 *UJ*	150 *UJ*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	4.8 *J*	11 *J*	300 *U*	58 *U*	120 *U*	58 *U*	58 *U*
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	7.5	33 *U*	330 *U*	64 *U*	130 *U*	64 *U*	64 *U*
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	14	28 *U*	280 *U*	55 *U*	110 *U*	55 *U*	55 *U*
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	16 *UJ*	49 *JN*	360 *UJ*	71 *UJ*	140 *UJ*	71 *UJ*	71 *UJ*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	2.9 *U*	29 *UJ*	290 *U*	56 *U*	110 *U*	56 *U*	56 *U*
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	2.8 *U*	8.0 *J*	280 *U*	54 *U*	110 *U*	54 *U*	54 *U*
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	4.0 *J*	28 *U*	280 *U*	54 *U*	110 *U*	54 *U*	54 *U*
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	4.5 *JN*	22	310 *U*	59 *U*	120 *U*	59 *U*	59 *U*
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	2.7 *U*	27 *U*	270 *U*	52 *U*	110 *U*	52 *U*	52 *U*
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	2.9 *U*	29 *U*	290 *U*	57 *U*	120 *U*	57 *U*	57 *U*
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	3.5 *JN*	29 *U*	290 *U*	56 *U*	110 *U*	56 *U*	56 *U*
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	9.8 *J*	35 *UJ*	350 *UJ*	67 *UJ*	140 *UJ*	67 *UJ*	67 *UJ*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	4.0	29 *U*	290 *U*	56 *U*	110 *U*	56 *U*	56 *U*
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	2.9 *U*	29 *U*	290 *U*	56 *U*	110 *U*	56 *U*	56 *U*
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	4.9 *J*	29 *UJ*	300 *U*	57 *U*	120 *U*	57 *U*	57 *U*
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	13 *JN*	17	260 *U*	50 *U*	100 *U*	50 *U*	50 *U*
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	3.9	29 *U*	290 *U*	57 *U*	120 *U*	57 *U*	57 *U*
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	2.8 *U*	28 *U*	280 *U*	54 *U*	110 *U*	54 *U*	54 *U*
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	5.8 *J*	26 *U*	260 *U*	51 *U*	100 *U*	51 *U*	51 *U*
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	8.2 *UJ*	14 *J*	820 *UJ*	160 *UJ*	320 *UJ*	160 *UJ*	160 *UJ*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	3.3 *U*	33 *UJ*	330 *U*	64 *U*	130 *U*	64 *U*	64 *U*

Table E-3. Pesticide/PCB results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Heptachlor epoxide (µg/kg dry)	Methoxychlor (µg/kg dry)	Toxaphene (µg/kg dry)	Aroclor® 1016 (µg/kg dry)	Aroclor® 1221 (µg/kg dry)	Aroclor® 1232 (µg/kg dry)	Aroclor® 1242 (µg/kg dry)
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	3.2 *U*	32 *UJ*	320 *U*	62 *U*	130 *U*	62 *U*	62 *U*
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	4.3 *UJ*	43 *UJ*	430 *UJ*	83 *UJ*	170 *UJ*	83 *UJ*	83 *UJ*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	11 *UJ*	110 *UJ*	1,100 *UJ*	200 *UJ*	420 *UJ*	200 *UJ*	200 *UJ*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	3.5 *UJ*	35 *UJ*	350 *UJ*	67 *UJ*	140 *UJ*	67 *UJ*	67 *UJ*
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	0.95 *J*	30 *U*	300 *U*	58 *U*	120 *U*	58 *U*	58 *U*
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	10 *J*	84 *UJ*	840 *UJ*	160 *UJ*	330 *UJ*	160 *UJ*	160 *UJ*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	4.9 *JN*	36 *J*	380 *UJ*	74 *UJ*	150 *UJ*	74 *UJ*	74 *UJ*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	1.2 *J*	29 *U*	290 *U*	55 *U*	110 *U*	55 *U*	55 *U*
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	2.9 *U*	29 *U*	290 *U*	57 *U*	120 *U*	57 *U*	57 *U*
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	16 *J*	63 *J*	510 *UJ*	99 *UJ*	200 *UJ*	99 *UJ*	99 *UJ*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	28 *JN*	31 *J*	210 *U*	41 *U*	83 *U*	41 *U*	41 *U*
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	3.4 *UJ*	9.6 *J*	340 *UJ*	67 *UJ*	140 *UJ*	67 *UJ*	67 *UJ*
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	3.6 *J*	31 *UJ*	310 *U*	61 *U*	120 *U*	61 *U*	61 *U*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	38 *JN*	39 *J*	290 *U*	56 *U*	110 *U*	56 *U*	56 *U*
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	2.8 *U*	29 *J*	260 *U*	51 *U*	100 *U*	51 *U*	51 *U*
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	1.7 *J*	27 *U*	270 *U*	53 *U*	110 *U*	53 *U*	53 *U*
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	2.8 *U*	28 *U*	280 *U*	55 *U*	110 *U*	55 *U*	55 *U*
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	2.9 *U*	29 *UJ*	290 *U*	56 *U*	110 *U*	56 *U*	56 *U*

Note:
Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
N - tentatively identified
U - undetected at detection limit shown
R - rejected

Table E-3. Pesticide/PCB results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Aroclor® 1248 (µg/kg dry)	Aroclor® 1254 (µg/kg dry)	Aroclor® 1260 (µg/kg dry)	Polychlorinated biphenyls (µg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	61 *UJ*	59 *J*	61 *UJ*	59 *J*
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	66 *U*	66 *U*	66 *U*	130 *U*
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	63 *U*	63 *U*	63 *U*	130 *U*
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	66 *U*	62 *U*	66 *U*	130 *U*
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	42 *R*	42 *R*	42 *R*	340 *R*
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	50 *U*	50 *U*	15 *JN*	15 *JN*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	43 *U*	43 *U*	43 *U*	88 *U*
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	53 *U*	53 *U*	53 *U*	110 *U*
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	73 *UJ*	270 *J*	73 *UJ*	270 *J*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	75 *UJ*	210 *J*	75 *UJ*	210 *J*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	71 *UJ*	79 *J*	71 *UJ*	79 *J*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	79 *UJ*	260 *JN*	79 *UJ*	260 *JN*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	160 *UJ*	1,300 *J*	160 *UJ*	1,300 *J*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	77 *UJ*	77 *UJ*	77 *UJ*	160 *UJ*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	72 *UJ*	72 *UJ*	72 *UJ*	150 *UJ*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	160 *UJ*	1,500 *J*	160 *UJ*	1,500 *J*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	59 *U*	160 *J*	59 *U*	160 *J*
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	70 *UJ*	220 *J*	70 *UJ*	220 *J*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	66 *UJ*	66 *UJ*	66 *UJ*	130 *UJ*
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	73 *UJ*	230 *J*	73 *UJ*	230 *J*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	630 *J*	620 *J*	87 *UJ*	1,300 *J*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	80 *UJ*	99 *J*	80 *UJ*	99 *J*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	73 *UJ*	73 *UJ*	73 *UJ*	150 *UJ*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	97 *UJ*	290 *J*	97 *UJ*	290 *J*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	120 *UJ*	120 *UJ*	45 *J*	45 *J*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	70 *UJ*	70 *UJ*	70 *UJ*	140 *UJ*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	66 *UJ*	66 *UJ*	66 *UJ*	130 *UJ*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	78 *UJ*	78 *UJ*	78 *UJ*	160 *UJ*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	130 *UJ*	130 *UJ*	130 *UJ*	260 *UJ*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	80 *UJ*	80 *UJ*	80 *UJ*	160 *UJ*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	67 *UJ*	67 *UJ*	67 *UJ*	140 *UJ*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	80 *UJ*	80 *UJ*	44 *J*	44 *J*
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6	83 *UJ*	83 *UJ*	53 *J*	53 *J*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	78 *UJ*	78 *UJ*	55 *J*	55 *J*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	77 *UJ*	77 *UJ*	77 *UJ*	160 *UJ*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	82 *UJ*	82 *UJ*	82 *UJ*	170 *UJ*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	86 *UJ*	86 *UJ*	86 *UJ*	170 *UJ*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	73 *UJ*	73 *UJ*	73 *UJ*	150 *UJ*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	67 *UJ*	67 *UJ*	67 *UJ*	140 *UJ*

Table E-3. Pesticide/PCB results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Aroclor® 1248 (µg/kg dry)	Aroclor® 1254 (µg/kg dry)	Aroclor® 1260 (µg/kg dry)	Polychlorinated biphenyls (µg/kg dry)
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	150 *UJ*	1,100 *J*	150 *UJ*	1,100 *J*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	92 *R*	92 *R*	92 *R*	740 *R*
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	59 *U*	59 *U*	59 *U*	120 *U*
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	65 *U*	65 *U*	65 *U*	130 *U*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	75 *R*	75 *R*	75 *R*	600 *R*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	80 *UJ*	80 *UJ*	80 *UJ*	160 *UJ*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	59 *U*	59 *U*	59 *U*	120 *U*
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	60 *U*	60 *U*	60 *U*	120 *U*
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	64 *U*	64 *U*	64 *U*	130 *U*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	66 *U*	66 *U*	66 *U*	130 *U*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	58 *U*	58 *U*	58 *U*	120 *U*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	59 *U*	59 *U*	59 *U*	120 *U*
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	67 *UJ*	67 *UJ*	67 *UJ*	140 *UJ*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	83 *UJ*	83 *UJ*	83 *UJ*	170 *UJ*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	61 *U*	61 *U*	61 *U*	120 *U*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	60 *U*	60 *U*	60 *U*	120 *U*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	70 *UJ*	70 *UJ*	70 *UJ*	140 *UJ*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	87 *UJ*	87 *UJ*	87 *UJ*	180 *UJ*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	75 *UJ*	75 *UJ*	82 *JN*	82 *JN*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	82 *UJ*	82 *UJ*	82 *UJ*	170 *UJ*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	82 *UJ*	82 *UJ*	41 *JN*	41 *JN*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	190 *UJ*	140 *J*	190 *UJ*	140 *J*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	50 *U*	40 *J*	50 *U*	40 *J*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	55 *U*	55 *U*	55 *U*	110 *U*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	72 *UJ*	94 *JN*	72 *UJ*	94 *JN*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	92 *UJ*	92 *UJ*	92 *UJ*	190 *UJ*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	45 *U*	45 *U*	45 *U*	92 *U*
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	45 *U*	45 *U*	45 *U*	92 *U*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	72 *UJ*	72 *UJ*	72 *UJ*	150 *UJ*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	56 *U*	56 *U*	56 *U*	110 *U*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	61 *U*	61 *U*	61 *U*	120 *U*
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	55 *U*	55 *U*	55 *U*	110 *U*
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	59 *U*	59 *U*	59 *U*	120 *U*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	70 *UJ*	70 *UJ*	70 *UJ*	140 *UJ*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	57 *U*	57 *U*	57 *U*	120 *U*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	59 *U*	59 *U*	59 *U*	120 *U*
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	61 *U*	61 *U*	61 *U*	120 *U*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	89 *UJ*	88 *JN*	89 *UJ*	88 *JN*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	80 *UJ*	150 *JN*	80 *UJ*	150 *JN*

Table E-3. Pesticide/PCB results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Aroclor® 1248 (µg/kg dry)	Aroclor® 1254 (µg/kg dry)	Aroclor® 1260 (µg/kg dry)	Polychlorinated biphenyls (µg/kg dry)
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	75 *UJ*	220 *J*	75 *UJ*	220 *J*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	75 *UJ*	140 *J*	75 *UJ*	140 *J*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	89 *UJ*	100 *J*	89 *UJ*	100 *J*
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	80 *UJ*	220 *J*	80 *UJ*	220 *J*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	75 *UJ*	75 *UJ*	51 *JN*	51 *JN*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	73 *UJ*	250 *J*	73 *UJ*	250 *J*
SD01	Ruplnd	10/23/1997	SD01	0	0	0	260 *U*	260 *U*	260 *U*	530 *U*
SD02	Ruplnd	10/24/1997	SD02	0	0	0	47 *U*	47 *U*	47 *U*	96 *U*
SD03	upland	10/23/1997	SD03	0	0	0	580 *U*	580 *U*	580 *U*	1,200 *U*
SD04	upland	10/24/1997	SD04	0	0	0	60 *U*	68	60 *U*	68
SD05	upland	10/23/1997	SD05	0	0	0	5,000 *U*	5,000 *U*	5,000 *U*	10,000 *U*
SD06	upland	10/23/1997	SD06	0	0	0	1,800 *UJ*	1,800 *UJ*	1,800 *UJ*	3,700 *UJ*
SD07	upland	10/23/1997	SD07	0	0	0	12,000 *J*	2,100 *UJ*	2,100 *UJ*	12,000 *J*
SD08	upland	10/23/1997	SD08	0	0	0	25,000 *J*	520 *U*	520 *U*	25,000 *J*
SD09	upland	10/28/1997	SD09	0	0	0	7,400 *J*	82 *UJ*	770 *J*	8,200 *J*
SD10	upland	10/28/1997	SD10	0	0	0	5,100 *J*	130 *UJ*	710 *J*	5,800 *J*
SD11	upland	10/28/1997	SD11	0	0	0	11,000 *UJ*	11,000 *UJ*	11,000 *UJ*	23,000 *UJ*
SD12	upland	10/28/1997	SD12	0	0	0	16,000 *J*	110 *UJ*	3,500 *J*	20,000 *J*
SD13	upland	10/27/1997	SD13	0	0	0	52 *U*	360 *J*	52 *U*	360 *J*
SD14	upland	10/27/1997	SD14	0	0	0	62 *U*	62 *U*	62 *U*	130 *U*
SD15	upland	10/24/1997	SD15	0	0	0	0 *R*	30 *J*	0 *R*	30 *RJ*
SD16	upland	10/27/1997	SD16	0	0	0	55 *U*	2,000	55 *U*	2,000
SD17	upland	10/27/1997	SD17	0	0	0	2,100	64 *U*	64 *U*	2,100
SD18	upland	10/29/1997	SD18	0	0	0	60 *UJ*	300 *J*	60 *UJ*	300 *J*
SD19	upland	10/24/1997	SD19	0	0	0	40 *U*	160	40 *U*	160
SD20	upland	10/24/1997	SD20	A	0	0	760 *U*	69,000	760 *U*	69,000
SD20	upland	10/24/1997	SD20	B	0	0	190 *U*	46,000 *J*	190 *U*	46,000 *J*
SD21	Ruplnd	10/24/1997	SD21	0	0	0	37 *U*	150 *J*	37 *U*	150 *J*
SD22	upland	10/24/1997	SD22	0	0	0	40 *U*	40 *U*	2,100 *J*	2,100 *J*
SD23	upland	10/24/1997	SD23	0	0	0	38 *U*	38 *U*	38 *U*	76 *U*
SD24	river	10/27/1997	SD24	0	0	0	97 *UJ*	97 *UJ*	97 *UJ*	200 *UJ*
SD25	river	10/29/1997	SD25	0	0	0	100 *UJ*	160 *J*	100 *UJ*	160 *J*
SD26	marsh	10/29/1997	SD26	0	0	0	190 *UJ*	240 *J*	190 *UJ*	240 *J*
SD27	river	10/30/1997	SD27	0	0	0	130 *UJ*	240 *UJ*	320 *J*	320 *J*
SD28	upland	10/28/1997	SD28	0	0	0	94 *UJ*	220 *J*	180 *J*	400 *J*
SD29	upland	10/27/1997	SD29	0	0	0	48 *U*	48 *U*	48 *U*	98 *U*
SD30	upland	10/29/1997	SD30	0	0	0	570 *J*	48 *UJ*	48 *UJ*	570 *J*
SD31	river	10/30/1997	SD31	0	0	0	100 *UJ*	190 *UJ*	100 *UJ*	200 *UJ*
SD32	upland	10/28/1997	SD32	0	0	0	70 *UJ*	70 *UJ*	70 *UJ*	140 *UJ*

Table E-3. Pesticide/PCB results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Aroclor® 1248 (µg/kg dry)	Aroclor® 1254 (µg/kg dry)	Aroclor® 1260 (µg/kg dry)	Polychlorinated biphenyls (µg/kg dry)
SD33	marsh	10/28/1997	SD33	0	0	0	85 *UJ*	470 *J*	190 *J*	660 *J*
SD34	upland	10/30/1997	SD34	0	0	0	58 *U*	150 *U*	58 *U*	150 *U*
SD35	marsh	10/30/1997	SD35	0	0	0	75 *UJ*	450 *J*	440	890 *J*
SD36	marsh	10/30/1997	SD36	0	0	0	48 *U*	170 *J*	48 *U*	170 *J*
SD37	marsh	10/30/1997	SD37	A	0	0	39 *U*	39 *U*	39 *U*	80 *U*
SD37	marsh	10/30/1997	SD37	B	0	0	40 *U*	40 *U*	40 *U*	81 *U*
SD38	river	6/24/1998	SD38	0	0	0	1,300 *J*	99 *UJ*	0 *R*	1,000 *RJ*
SD39	river	6/24/1998	SD39	A	0	0	86 *UJ*	86 *UJ*	86 *UJ*	170 *UJ*
SD39	river	6/24/1998	SD39	B	0	0	91 *UJ*	91 *UJ*	91 *UJ*	180 *UJ*
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	32,000 *J*	730 *UJ*	730 *UJ*	32,000 *J*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	240 *J*	61 *U*	61 *U*	240 *J*
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	95 *J*	63 *U*	63 *U*	95 *J*
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	1,900	60 *U*	60 *U*	1,900
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	10,000 *J*	81 *UJ*	3,100 *J*	13,000 *J*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	230	57 *U*	57 *U*	230
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	87 *J*	61 *U*	61 *U*	87 *J*
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	730	64 *U*	64 *U*	730
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	22,000 *J*	150 *UJ*	5,300 *J*	27,000 *J*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	140 *J*	58 *U*	58 *U*	140 *J*
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	240	64 *U*	130 *J*	370 *J*
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	530	55 *U*	120	650
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	1,200 *J*	71 *UJ*	1,100 *J*	2,300 *J*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	56 *U*	56 *U*	56 *U*	110 *U*
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	54 *U*	54 *U*	54 *U*	110 *U*
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	150	54 *U*	170 *J*	320 *J*
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	170	59 *U*	120 *J*	290 *J*
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	52 *U*	52 *U*	52 *U*	110 *U*
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	57 *U*	57 *U*	57 *U*	120 *U*
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	56 *U*	56 *U*	56 *U*	110 *U*
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	530 *J*	67 *UJ*	250 *J*	780 *J*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	56 *U*	56 *U*	56 *U*	110 *U*
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	56 *U*	56 *U*	56 *U*	110 *U*
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	57 *U*	57 *U*	57 *U*	120 *U*
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	340	270	50 *U*	610
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	57 *U*	57 *U*	57 *U*	120 *U*
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	54 *U*	54 *U*	54 *U*	110 *U*
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	51 *U*	51 *U*	51 *U*	100 *U*
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	280 *J*	220 *J*	160 *UJ*	500 *J*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	64 *U*	64 *U*	64 *U*	130 *U*

Table E-3. Pesticide/PCB results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Aroclor® 1248 (µg/kg dry)	Aroclor® 1254 (µg/kg dry)	Aroclor® 1260 (µg/kg dry)	Polychlorinated biphenyls (µg/kg dry)
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	62 *U*	62 *U*	62 *U*	130 *U*
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	83 *UJ*	83 *UJ*	83 *UJ*	170 *UJ*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	210 *J*	210 *J*	200 *UJ*	420 *J*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	67 *UJ*	67 *UJ*	67 *UJ*	140 *UJ*
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	58 *U*	58 *U*	58 *U*	120 *U*
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	190 *J*	200 *J*	160 *UJ*	390 *J*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	130 *J*	230 *J*	74 *UJ*	360 *J*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	55 *U*	55 *U*	55 *U*	110 *U*
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	57 *U*	57 *U*	57 *U*	120 *U*
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	280 *J*	390 *J*	99 *UJ*	670 *J*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	940	41 *U*	41 *U*	940
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	58 *J*	97 *J*	67 *UJ*	160 *J*
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	61 *U*	61 *U*	61 *U*	120 *U*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	1,300	440	56 *U*	1,700
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	110 *J*	51 *U*	67	180 *J*
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	53 *U*	53 *U*	53 *U*	110 *U*
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	55 *U*	55 *U*	55 *U*	110 *U*
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	56 *U*	56 *U*	56 *U*	110 *U*

Note:
Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
N - tentatively identified
U - undetected at detection limit shown
R - rejected

Table E-4. Dioxin and furan results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	2,3,7,8-Tetrachloro-dibenzo-p-dioxin (ng/kg dry)	1,2,3,7,8-Pentachloro-dibenzo-p-dioxin (ng/kg dry)	1,2,3,4,7,8-Hexachloro-dibenzo-p-dioxin (ng/kg dry)	1,2,3,6,7,8-Hexachloro-dibenzo-p-dioxin (ng/kg dry)	1,2,3,7,8,9-Hexachloro-dibenzo-p-dioxin (ng/kg dry)	1,2,3,4,6,7,8-Heptachloro-dibenzo-p-dioxin (ng/kg dry)
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	21 *J*	21 *J*	11 *J*	140 *J*	59 *J*	750 *J*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	11 *J*	7.2 *J*	6.5 *J*	55 *J*	30 *J*	570 *J*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	5.4 *J*	4.9 *J*	5.8 *J*	27 *J*	17 *J*	380 *J*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	0.50 *J*	0.61 *J*	0.92 *J*	3.0 *J*	2.7 *J*	62 *J*
RSD21	river	10/8/1999	RSD21(0-6)	0	0	6	21 *J*	22 *J*	13 *J*	130 *J*	63 *J*	690 *J*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	7.9 *J*	6.3 *J*	7.3 *J*	44 *J*	25 *J*	450 *J*
SD01	Ruplnd	10/23/1997	SD01-SD	0	0	0	56 *J*	3.8 *J*	2.6 *UJ*	5.4 *J*	3.4 *J*	150 *J*
SD05	upland	10/23/1997	SD05-SD	0	0	0	2.2 *UJ*	2.8 *UJ*	1.3 *UJ*	2.5 *J*	2.6 *J*	96 *J*
SD06	upland	10/23/1997	SD06-SD	0	0	0	1.3 *J*	6.1 *UJ*	1.0 *UJ*	2.0 *UJ*	1.8 *UJ*	53 *J*
SD07	upland	10/23/1997	SD07-SD	0	0	0	180 *J*	7.4 *J*	5.1 *UJ*	67 *J*	23 *J*	860 *J*
SD09	upland	10/28/1997	SD09-SD	0	0	0	49 *J*	26 *UJ*	10 *UJ*	77 *J*	26 *J*	2,100 *J*
SD15	upland	10/24/1997	SD15-SD	0	0	0	0.87 *J*	3.1 *UJ*	3.5 *UJ*	4.3 *J*	3.5 *J*	69 *J*
SD17	upland	10/27/1997	SD17-SD	0	0	0	2.4 *J*	3.5 *UJ*	3.7 *J*	11 *J*	6.8 *J*	240 *J*
SD19	upland	10/24/1997	SD19-SD	0	0	0	0.63 *U*	0.66 *J*	0.74 *J*	1.1 *J*	1.1 *UJ*	71 *J*
SD20	upland	10/24/1997	SD20-SD	A	0	0	2.1 *UJ*	56 *UJ*	27 *UJ*	24 *UJ*	24 *UJ*	84 *J*
SD20	upland	10/24/1997	SD20-SD	B	0	0	2.9 *UJ*	110 *UJ*	2.6 *UJ*	7.3 *UJ*	5.3 *UJ*	74 *J*
SD21	Ruplnd	10/24/1997	SD21-SD	0	0	0	3.2 *J*	0.36 *J*	0.47 *J*	0.68 *UJ*	0.65 *UJ*	17 *J*
SD22	upland	10/24/1997	SD22-SD	0	0	0	3.5 *J*	13 *UJ*	15 *J*	27 *J*	22 *J*	280 *J*
SD29	upland	10/27/1997	SD29-SD	0	0	0	0.28 *UJ*	0.44 *J*	0.47 *J*	1.1 *UJ*	0.72 *UJ*	32 *J*

Note: Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
U - undetected at detection limit shown

Table E-4. Dioxin and furan results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Octachloro-dibenzo-p-dioxin (ng/kg dry)	2,3,7,8-Tetrachloro-dibenzofuran (ng/kg dry)	1,2,3,7,8-Pentachloro-dibenzofuran (ng/kg dry)	2,3,4,7,8-Pentachloro-dibenzofuran (ng/kg dry)	1,2,3,4,7,8-Hexachloro-dibenzofuran (ng/kg dry)	1,2,3,6,7,8-Hexachloro-dibenzofuran (ng/kg dry)
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	9,700 *J*	75 *J*	15 *J*	37 *J*	39 *J*	19 *J*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	11,000 *J*	33 *J*	12 *J*	27 *J*	29 *J*	15 *J*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	9,000 *J*	23 *J*	8.3 *J*	16 *J*	18 *J*	10 *J*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	2,300	2.3 *J*	1.1 *J*	1.7 *J*	2.0 *J*	1.1 *J*
RSD21	river	10/8/1999	RSD21(0-6)	0	0	6	8,500 *J*	67 *J*	16 *J*	31 *J*	37 *J*	17 *J*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	10,000 *J*	27 *J*	12 *J*	25 *J*	27 *J*	16 *J*
SD01	Ruplnd	10/23/1997	SD01-SD	0	0	0	4,800 *J*	4.0 *J*	2.8 *J*	5.8 *J*	5.5 *J*	3.3 *J*
SD05	upland	10/23/1997	SD05-SD	0	0	0	8,600 *J*	2.0 *UJ*	0.84 *UJ*	2.4 *UJ*	2.4 *J*	1.4 *J*
SD06	upland	10/23/1997	SD06-SD	0	0	0	2,200 *J*	2.6 *J*	1.4 *J*	2.8 *J*	5.9 *J*	1.9 *UJ*
SD07	upland	10/23/1997	SD07-SD	0	0	0	10,000 *J*	24 *J*	3.7 *J*	24 *J*	43 *J*	12 *J*
SD09	upland	10/28/1997	SD09-SD	0	0	0	29,000 *J*	25 *J*	1.6 *UJ*	35 *J*	86 *J*	17 *J*
SD15	upland	10/24/1997	SD15-SD	0	0	0	9,100 *J*	3.1 *J*	5.0 *J*	8.1 *J*	16 *J*	8.7 *J*
SD17	upland	10/27/1997	SD17-SD	0	0	0	5,900 *J*	5.5 *J*	6.0 *J*	9.0 *J*	25 *J*	14 *J*
SD19	upland	10/24/1997	SD19-SD	0	0	0	13,000 *J*	1.6 *J*	1.0 *UJ*	1.2 *J*	3.8 *J*	1.5 *J*
SD20	upland	10/24/1997	SD20-SD	A	0	0	890 *J*	16 *J*	13 *J*	79 *J*	160 *J*	61 *J*
SD20	upland	10/24/1997	SD20-SD	B	0	0	930 *J*	17 *J*	11 *J*	76 *J*	170 *J*	67 *J*
SD21	Ruplnd	10/24/1997	SD21-SD	0	0	0	1,200 *J*	0.49 *UJ*	0.74 *J*	1.6 *J*	2.7 *J*	1.2 *J*
SD22	upland	10/24/1997	SD22-SD	0	0	0	7,360 *J*	60 *J*	22 *J*	49 *J*	66 *J*	35 *J*
SD29	upland	10/27/1997	SD29-SD	0	0	0	1,500 *J*	1.0 *J*	0.64 *J*	2.9 *J*	2.3 *J*	1.9 *J*

Note: Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
U - undetected at detection limit shown

Table E-4. Dioxin and furan results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	2,3,4,6,7,8-Hexachloro-dibenzofuran (ng/kg dry)	1,2,3,7,8,9-Hexachloro-dibenzofuran (ng/kg dry)	1,2,3,4,6,7,8-Heptachloro-dibenzofuran (ng/kg dry)	1,2,3,4,7,8,9-Heptachloro-dibenzofuran (ng/kg dry)	Octachloro-dibenzofuran (ng/kg dry)
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	22 *J*	7.7 *J*	240 *J*	21 *J*	430 *J*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	19 *J*	6.0 *J*	160 *J*	14 *J*	410 *J*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	13 *J*	3.9 *J*	110 *J*	9.9 *J*	230
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	1.4 *J*	0.53 *J*	8.9 *J*	1.0 *J*	21
RSD21	river	10/8/1999	RSD21(0-6)	0	0	6	22 *J*	7.5 *J*	220 *J*	20 *J*	430 *J*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	21 *J*	6.8 *J*	150 *J*	15 *J*	370 *J*
SD01	Ruplnd	10/23/1997	SD01-SD	0	0	0	4.6 *J*	0.94 *J*	48 *J*	4.6 *J*	130 *J*
SD05	upland	10/23/1997	SD05-SD	0	0	0	1.7 *UJ*	0.47 *UJ*	11 *J*	1.4 *UJ*	19 *J*
SD06	upland	10/23/1997	SD06-SD	0	0	0	1.9 *J*	0.85 *UJ*	18 *UJ*	1.7 *UJ*	26 *J*
SD07	upland	10/23/1997	SD07-SD	0	0	0	14 *UJ*	5.7 *J*	160 *J*	17 *J*	500 *J*
SD09	upland	10/28/1997	SD09-SD	0	0	0	30 *J*	17 *J*	340 *J*	32 *J*	1,300 *J*
SD15	upland	10/24/1997	SD15-SD	0	0	0	9.8 *J*	3.2 *J*	50 *J*	6.2 *J*	51 *J*
SD17	upland	10/27/1997	SD17-SD	0	0	0	14 *J*	3.9 *J*	110 *J*	8.4 *J*	230 *J*
SD19	upland	10/24/1997	SD19-SD	0	0	0	1.3 *J*	0.41 *UJ*	10 *J*	0.90 *UJ*	14 *J*
SD20	upland	10/24/1997	SD20-SD	A	0	0	60 *J*	53 *J*	130 *J*	47 *J*	280 *J*
SD20	upland	10/24/1997	SD20-SD	B	0	0	62 *J*	52 *J*	120 *J*	53 *J*	280 *J*
SD21	Ruplnd	10/24/1997	SD21-SD	0	0	0	1.1 *J*	0.45 *UJ*	8.1 *J*	0.59 *J*	10 *J*
SD22	upland	10/24/1997	SD22-SD	0	0	0	47 *J*	15 *J*	240 *J*	24 *J*	250 *J*
SD29	upland	10/27/1997	SD29-SD	0	0	0	3.7 *J*	1.2 *UJ*	17 *J*	1.7 *J*	22 *J*

Note:
Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
U - undetected at detection limit shown

Table E-5. Inorganic analyte results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Aluminum (mg/kg dry)	Antimony (mg/kg dry)	Arsenic (mg/kg dry)	Barium (mg/kg dry)	Beryllium (mg/kg dry)	Cadmium (mg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	10,500	0.84	21.9	43.8	0.88	0.15
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	19,300	0.79 *U*	80.7	80.7	1.2	0.11 *U*
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	20,600	0.81 *U*	36.5	81.4	1.3	0.12 *U*
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	14,300	1.3	56.3	64.5	1.1	0.48
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	1,750	0.52 *UJN*	3.2	11.3	0.30	0.080 *U*
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	7,570	1.1 *JN*	27.8	38.8	0.91	0.090 *U*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	5,160	0.53 *UJN*	13.9	21.4	0.56	0.080 *U*
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	8,670	1.2 *JN*	14.9	43.9	1.3	0.40
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	18,000 *J*	4.0 *J*	70.9 *J*	85.0 *J*	1.4 *J*	6.6 *J*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	16,700 *J*	76.8 *J*	227 *J*	161 *J*	2.1 *J*	1.7 *J*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	17,000 *J*	12.7 *J*	231 *J*	118 *J*	1.8 *J*	0.95 *J*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	17,500 *J*	19.6 *J*	130 *J*	114 *J*	1.9 *J*	2.0 *J*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	15,500 *J*	6.8 *JN*	171 *J*	116 *J*	1.7 *J*	0.80 *J*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	18,900 *J*	29.3 *JN*	254 *J*	134 *J*	2.0 *J*	0.75 *J*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	17,100 *J*	15.2 *JN*	245 *J*	135 *J*	1.7 *J*	1.0 *J*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	15,700 *J*	40.1 *JN*	240 *J*	122 *J*	1.9 *J*	1.2 *J*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	9,680	9.9	68.5	64.2	1.1	1.3
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	16,700 *J*	56.4 *J*	206 *J*	148 *J*	1.9 *J*	1.6 *J*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	17,800	14.0	180	101	1.3	0.63
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	13,600 *J*	22.7 *J*	140 *J*	84.2 *J*	1.7 *J*	1.7 *J*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	13,700 *J*	12.0 *J*	173 *J*	89.8 *J*	2.9 *J*	1.4 *J*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	14,100 *J*	29.6 *J*	169 *J*	109 *J*	2.8 *J*	2.6 *J*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	16,900 *J*	12.2 *J*	241 *J*	119 *J*	1.6 *J*	0.96 *J*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	14,300 *J*	18.7 *J*	149 *J*	103 *J*	3.4 *J*	2.9 *J*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	14,700 *J*	15.7 *JN*	194 *J*	105 *J*	0.50 *J*	1.0 *J*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	17,800 *J*	6.3 *JN*	229 *J*	137 *J*	1.0 *J*	0.13 *UJ*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	20,500 *J*	1.6 *JN*	156 *J*	128 *J*	1.5 *J*	0.12 *UJ*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	17,000 *J*	15.1 *JN*	288 *J*	135 *J*	0.89 *J*	0.49 *J*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	18,100 *J*	8.0 *JN*	654 *J*	117 *J*	3.1 *J*	1.8 *J*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	19,200 *J*	33.0 *JN*	436 *J*	165 *J*	2.1 *J*	1.3 *J*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	19,300 *J*	5.5 *JN*	278 *J*	144 *J*	1.6 *J*	0.58 *J*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	20,800 *J*	5.1 *JN*	845 *J*	148 *J*	2.3 *J*	4.7 *J*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	18,200 *J*	25.8 *JN*	186 *J*	141 *J*	2.3 *J*	2.5 *J*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	15,200 *J*	42.1 *JN*	189 *J*	144 *J*	2.3 *J*	2.2 *J*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	16,400 *J*	35.1 *JN*	196 *J*	144 *J*	2.2 *J*	2.2 *J*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	14,300 *J*	15.8 *JN*	163 *J*	107 *J*	1.5 *J*	0.18 *UJ*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	18,000 *J*	0.92 *JN*	124 *J*	113 *J*	1.4 *J*	0.13 *UJ*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	20,600 *J*	1.2 *JN*	135 *J*	119 *J*	1.5 *J*	0.12 *UJ*
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	18,800 *J*	1.3 *JN*	158 *J*	125 *J*	1.4 *J*	0.14 *UJ*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	19,900 *J*	18.0 *JN*	129 *J*	113 *J*	1.4 *J*	1.2 *J*

Table E-5. Inorganic analyte results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Aluminum (mg/kg dry)	Antimony (mg/kg dry)	Arsenic (mg/kg dry)	Barium (mg/kg dry)	Beryllium (mg/kg dry)	Cadmium (mg/kg dry)
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	18,700 *J*	1.3 *JN*	96.2 *J*	92.1 *J*	1.2 *J*	0.12 *UJ*
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	21,700 *J*	1.3 *JN*	84.6 *J*	92.3 *J*	1.3 *J*	0.12 *UJ*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	21,100 *J*	5.4 *JN*	194 *J*	132 *J*	1.4 *J*	0.61 *J*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	17,200 *J*	1.0 *UJ*	102 *J*	92.2 *J*	1.5 *J*	0.49 *J*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	13,900	0.75 *U*	68.5	59.5	1.1	0.11 *U*
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	12,400	0.75 *U*	17.9	31.6	0.97	0.11 *U*
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	19,000 *J*	0.87 *UJ*	124 *J*	99.6 *J*	1.5 *J*	0.17 *J*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	19,700 *J*	1.4 *JN*	77.5 *J*	78.2 *J*	1.2 *J*	0.12 *UJ*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	23,100	1.3 *JN*	75.6 *J*	94.9	1.4	0.10 *U*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	14,600	0.73 *UJN*	18.2 *J*	35.3	0.91	0.10 *U*
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	21,100	1.4 *JN*	97.6 *J*	95.6	1.3	0.12 *U*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	19,800 *J*	4.6 *JN*	171 *J*	113 *J*	1.4 *J*	0.16 *UJ*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	16,800 *J*	0.89 *JN*	76.3	83.9	1.2	0.11 *U*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	18,600 *J*	0.76 *UJN*	70.3	88.2	1.3	0.11 *U*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	16,700 *J*	0.91 *UJN*	96.6 *J*	94.3 *J*	1.2 *J*	0.13 *UJ*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	19,000 *J*	3.7 *JN*	47.0 *J*	86.1 *J*	1.8 *J*	1.6 *J*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	18,800 *J*	3.1 *JN*	41.1 *J*	99.8 *J*	1.6 *J*	1.3 *J*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	21,900 *J*	3.8 *JN*	59.8 *J*	128 *J*	1.7 *J*	2.5 *J*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	18,300 *J*	2.9 *JN*	41.8 *J*	92.2 *J*	1.7 *J*	1.7 *J*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	18,500 *J*	1.3 *UJN*	35.3 *J*	52.7 *J*	3.1 *J*	0.19 *UJ*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	7,340 *J*	0.70 *UJN*	11.2	25.1	0.60	0.10 *U*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	9,520 *J*	0.70 *UJN*	10.7	25.0	0.80	0.10 *U*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	12,200 *J*	1.9 *JN*	20.9 *J*	43.4 *J*	1.7 *J*	0.13 *UJ*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	16,400 *J*	1.9 *JN*	38.5 *J*	60.0 *J*	2.1 *J*	0.19 *UJ*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	4,760 *J*	0.57 *UJN*	14.5	24.4	0.60	0.080 *U*
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	3,240 *J*	0.91 *JN*	99.8	17.7	0.56	0.080 *U*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	11,900 *J*	1.5 *JN*	27.0 *J*	74.8 *J*	1.7 *J*	0.14 *UJ*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	13,500	0.88 *JN*	41.8 *J*	51.3	0.81	0.10 *U*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	15,400	0.74 *UJN*	12.6 *J*	32.5	0.88	0.11 *U*
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	17,200	0.78 *UJN*	12.8 *J*	35.7	0.96	0.11 *U*
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	24,100	0.76 *UJN*	32.9 *J*	69.0	1.3	0.11 *U*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	9,070	0.76 *JN*	22.2 *J*	32.3	0.57	0.10 *U*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	19,300	0.72 *UJN*	12.5 *J*	51.0	1.1	0.10 *U*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	17,200	0.73 *UJN*	12.9 *J*	39.5	0.91	0.10 *U*
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	26,500	0.80 *UJN*	48.4 *J*	87.6	1.4	0.11 *U*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	17,700 *J*	3.5 *JN*	49.1 *J*	78.9 *J*	2.3 *J*	1.1 *J*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	17,700 *J*	3.5 *JN*	59.5 *J*	100 *J*	1.3 *J*	0.62 *J*
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	18,600 *J*	3.5 *JN*	90.5 *J*	124 *J*	1.5 *J*	1.3 *J*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	12,000 *J*	3.1 *JN*	31.6 *J*	65.8 *J*	1.2 *J*	0.13 *UJ*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	16,000 *J*	2.9 *JN*	43.3 *J*	72.0 *J*	1.7 *J*	0.16 *UJ*

Table E-5. Inorganic analyte results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Aluminum (mg/kg dry)	Antimony (mg/kg dry)	Arsenic (mg/kg dry)	Barium (mg/kg dry)	Beryllium (mg/kg dry)	Cadmium (mg/kg dry)
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	16,800 *J*	3.3 *JN*	61.0 *J*	99.9 *J*	1.3 *J*	0.85 *J*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	19,200 *J*	4.3 *JN*	94.4 *J*	127 *J*	1.5 *J*	1.4 *J*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	13,500 *J*	3.7 *JN*	31.1 *J*	68.1 *J*	1.2 *J*	0.13 *UJ*
SD01	Ruplnd	10/23/1997	SD01	0	0	0	4,160 *J*	2.2 *JN*	8.2	36.4	0.29	0.090 *U*
SD02	Ruplnd	10/24/1997	SD02	0	0	0	2,860 *J*	1.4 *UN*	7.4	5.4	0.21	0.090 *U*
SD03	upland	10/23/1997	SD03	0	0	0	10,700 *J*	2.3 *JN*	15.1	42.6	0.73	0.11 *U*
SD04	upland	10/24/1997	SD04	0	0	0	13,600 *J*	1.7 *UN*	21.8	59.2	1.5	0.10 *U*
SD05	upland	10/23/1997	SD05	0	0	0	4,630 *J*	1.4 *UN*	4.2	22.9	0.25	0.090 *U*
SD06	upland	10/23/1997	SD06	0	0	0	16,600 *J*	5.3 *JN*	29.1 *J*	47.5 *J*	2.5 *J*	2.0 *J*
SD07	upland	10/23/1997	SD07	0	0	0	8,500 *J*	17.1 *JN*	2,590 *J*	159 *J*	0.91 *J*	11.3 *J*
SD08	upland	10/23/1997	SD08	0	0	0	7,820 *J*	1.5 *UN*	775	42.4	0.44	0.090 *U*
SD09	upland	10/28/1997	SD09	0	0	0	10,500 *J*	9.4 *JN*	600 *JN*	61.6 *J*	1.4 *J*	4.5 *J*
SD10	upland	10/28/1997	SD10	0	0	0	10,200 *J*	3.7 *JN*	547 *JN*	66.4 *J*	1.5 *J*	3.2 *J*
SD11	upland	10/28/1997	SD11	0	0	0	11,100 *J*	12.4 *JN*	1,420 *JN*	99.2 *J*	1.0 *J*	2.8 *J*
SD12	upland	10/28/1997	SD12	0	0	0	8,660 *J*	10.8 *JN*	3,480 *JN*	120 *J*	0.50 *J*	0.66 *J*
SD13	upland	10/27/1997	SD13	0	0	0	2,560 *J*	5.4 *JN*	23.1 *JN*	33.3	0.14	0.090 *U*
SD14	upland	10/27/1997	SD14	0	0	0	3,670 *J*	1.6 *UJN*	6.4 *JN*	29.3	0.41	0.63
SD15	upland	10/24/1997	SD15	0	0	0	7,050 *J*	5.0 *JN*	7.3	35.9	0.58	0.070 *U*
SD16	upland	10/27/1997	SD16	0	0	0	3,540 *J*	9.6 *JN*	48.8 *JN*	32.4	0.50	1.8
SD17	upland	10/27/1997	SD17	0	0	0	6,910 *J*	4.6 *JN*	36.8 *JN*	67.5 *J*	0.57 *J*	1.5 *J*
SD18	upland	10/29/1997	SD18	0	0	0	3,440 *J*	7.9 *JN*	547 *JN*	48.2 *J*	0.63 *J*	2.8 *J*
SD19	upland	10/24/1997	SD19	0	0	0	4,370 *J*	1.2 *UN*	15.8	25.6	0.25	0.070 *U*
SD20	upland	10/24/1997	SD20	A	0	0	10,000 *J*	14.2 *JN*	4.3	22.6	0.52	0.77
SD20	upland	10/24/1997	SD20	B	0	0	10,900 *J*	26.1 *JN*	4.5	26.9	0.50	0.87
SD21	Ruplnd	10/24/1997	SD21	0	0	0	1,390 *J*	1.1 *UN*	3.6	11.6	0.080	0.070 *U*
SD22	upland	10/24/1997	SD22	0	0	0	6,090 *J*	25.7 *JN*	22.6	51.0	1.4	6.8
SD23	upland	10/24/1997	SD23	0	0	0	3,460 *J*	2.1 *JN*	13.2	15.6	0.26	0.070 *U*
SD23	upland	10/24/1997	SD23	0	0	0	3,460 *J*	2.1 *JN*	13.2	15.6	0.26	0.070 *U*
SD24	river	10/27/1997	SD24	0	0	0	8,700 *J*	3.3 *UJN*	37.8 *JN*	40.0 *J*	1.3 *J*	0.37 *J*
SD25	river	10/29/1997	SD25	0	0	0	9,950 *J*	9.7 *JN*	65.2 *JN*	48.4 *J*	1.2 *J*	2.8 *J*
SD26	marsh	10/29/1997	SD26	0	0	0	9,660 *J*	11.1 *JN*	342 *JN*	56.6 *J*	1.3 *J*	2.2 *J*
SD27	river	10/30/1997	SD27	0	0	0	16,900 *J*	17.4 *JN*	116 *JN*	54.8 *J*	1.9 *J*	3.8 *J*
SD28	upland	10/28/1997	SD28	0	0	0	11,200 *J*	5.2 *JN*	445 *JN*	117 *J*	0.67 *J*	0.42 *J*
SD29	upland	10/27/1997	SD29	0	0	0	3,910 *J*	1.2 *UJN*	1.5 *JN*	20.7	0.27	0.070 *U*
SD30	upland	10/29/1997	SD30	0	0	0	3,730 *J*	1.4 *UJN*	31.6 *JN*	22.5	0.44	1.2
SD31	river	10/30/1997	SD31	0	0	0	14,300 *J*	17.8 *JN*	144 *JN*	73.7 *J*	1.3 *J*	1.6 *J*
SD32	upland	10/28/1997	SD32	0	0	0	4,350 *J*	6.6 *JN*	1,110 *JN*	37.7 *J*	1.0 *J*	2.7 *J*
SD33	marsh	10/28/1997	SD33	0	0	0	3,070 *J*	8.5 *JN*	4,030 *JN*	35.6 *J*	0.41 *J*	2.1 *J*
SD34	upland	10/30/1997	SD34	0	0	0	3,420	21.4 *JN*	134 *JN*	29.9	0.32	6.5
SD35	marsh	10/30/1997	SD35	0	0	0	17,300 *J*	3.9 *JN*	1,380 *JN*	139 *J*	1.1 *J*	0.15 *UJ*

Table E-5. Inorganic analyte results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Aluminum (mg/kg dry)	Antimony (mg/kg dry)	Arsenic (mg/kg dry)	Barium (mg/kg dry)	Beryllium (mg/kg dry)	Cadmium (mg/kg dry)
SD36	marsh	10/30/1997	SD36	0	0	0	4,440	6.3 *JN*	41.4 *JN*	29.6	0.25	0.090 *U*
SD37	marsh	10/30/1997	SD37	A	0	0	1,860	1.3 *UJN*	9.4 *JN*	16.8	0.14	0.080 *U*
SD37	marsh	10/30/1997	SD37	B	0	0	2,310	1.6 *JN*	8.2 *JN*	25.0	0.12	0.070 *U*
SD38	river	6/24/1998	SD38	0	0	0	20,700 *J*	10.6 *JN*	2,200 *J*	163 *J*	2.0 *J*	2.2 *J*
SD39	river	6/24/1998	SD39	A	0	0	20,000 *J*	3.1 *JN*	138 *J*	111 *J*	1.5 *J*	0.35 *UJ*
SD39	river	6/24/1998	SD39	B	0	0	16,700 *J*	5.2 *JN*	132 *J*	97.9 *J*	1.4 *J*	0.49 *UJ*
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	17,300 *J*	14.7 *J*	3,540 *J*	157 *J*	0.99 *J*	1.0 *J*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	22,300	2.7 *J*	181	148	1.5	0.10 *U*
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	23,600	1.6 *J*	143	143	1.9 *J*	0.11 *U*
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	24,700	2.7 *J*	559	142	1.3	0.11 *U*
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	17,800 *J*	14.8 *J*	4,830 *J*	182 *J*	0.85 *J*	0.47 *J*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	23,100	2.0	220	113	1.5	0.11 *U*
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	15,300	0.65 *U*	160	68.0	1.8	0.090 *U*
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	24,100 *J*	2.7 *J*	1,140 *J*	146 *J*	1.3 *J*	0.31 *J*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	9,930 *J*	33.7 *J*	8,220 *J*	174 *J*	1.1 *J*	5.6 *J*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	17,000	0.77 *U*	490	109	1.6	0.74
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	17,900	0.80	485	109	2.1	1.4
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	12,700	0.71 *U*	476	108	0.92	0.10 *U*
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	18,000 *J*	6.9 *J*	3,430 *J*	130 *J*	0.93 *J*	0.51 *J*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	23,400	1.3	190	120	1.4	0.10 *U*
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	21,600	1.2	182	127	1.5	0.10 *U*
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	22,000	2.5	741	157	1.0	0.10 *U*
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	4,360	5.3	654	50.1	0.59	0.15
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	22,500	0.74 *U*	145	129	1.7	0.28
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	20,300	0.78 *U*	166	119	1.5	0.11 *U*
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	18,100	1.5	188	143	0.95	0.10 *U*
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	9,410 *J*	18.7 *J*	6,610 *J*	108 *J*	1.8 *J*	0.16 *UJ*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	25,200	1.1	169	145	1.8	0.11 *U*
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	22,400	0.91	172	116	1.6	0.11 *U*
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	21,900	2.3	405	166	0.78	0.10 *U*
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	8,250	2.8	1,980	59.6	0.41	0.090 *U*
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	19,800	1.1	202	93.9	1.4	0.51
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	14,900	0.69 *U*	35.5	47.8	1.1	0.10 *U*
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	16,100	0.68 *U*	351	113	0.74	0.10 *U*
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	16,900 *J*	8.7 *J*	393 *J*	89.9 *J*	2.8 *J*	3.3 *J*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	23,000 *J*	1.6 *J*	125 *J*	119 *J*	1.9 *J*	0.56 *J*
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	19,300	0.72 *U*	67.3	70.2	1.3	0.10 *U*
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	34,200 *J*	1.9 *UJ*	216 *J*	189 *J*	3.2 *J*	0.88 *J*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	12,900 *J*	9.0 *J*	231 *J*	54.3 *J*	2.3 *J*	0.32 *UJ*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	16,100 *J*	0.87 *UJ*	57.7 *J*	55.1 *J*	1.4 *J*	0.25 *J*

Table E-5. Inorganic analyte results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Aluminum (mg/kg dry)	Antimony (mg/kg dry)	Arsenic (mg/kg dry)	Barium (mg/kg dry)	Beryllium (mg/kg dry)	Cadmium (mg/kg dry)
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	14,100	0.77 *U*	21.1	36.6	0.99	0.11 *U*
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	7,300 *J*	21.9 *J*	412 *J*	37.5 *J*	2.2 *J*	2.7 *J*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	12,000 *J*	3.0 *J*	32.3 *J*	56.0 *J*	1.0 *J*	0.14 *UJ*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	14,000	0.72 *U*	27.4	34.3	0.90	0.10 *U*
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	18,000	0.74 *U*	24.5	55.6	1.1	0.11 *U*
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	10,600 *J*	14.0 *J*	485 *J*	59.0 *J*	1.4 *J*	0.43 *J*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	2,200	3.2	24.7	22.5	0.27	0.070 *U*
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	21,600 *J*	0.91 *UJ*	201 *J*	211 *J*	1.4 *J*	3.3 *J*
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	18,300 *J*	0.87 *UJ*	130 *J*	114 *J*	1.2 *J*	0.21 *J*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	6,440	8.7	416	67.9	0.97	3.0
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	4,400	6.4	925	49.7	0.57	0.11 *U*
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	22,400	0.85	135	129	1.7	0.11 *U*
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	23,100	1.3	180	124	1.6	0.11 *U*
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	22,400	1.8	143	161	0.95	0.11 *U*

Note:
Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
N - spike sample recovery not within control limits
U - undetected at detection limit shown
R - rejected

Table E-5. Inorganic analyte results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Chromium (mg/kg dry)	Chromium, hexavalent (mg/kg dry)	Cobalt (mg/kg dry)	Copper (mg/kg dry)	Iron (mg/kg dry)	Lead (mg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	36.3		7.5	91.7	22,000	58.4
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	52.6		11.8	168	33,800	114
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	52.7		14.2	139	36,800	115
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	56.1		10.4	173	40,000	95.2
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	7.7 *J*		1.2	18.6 *R*	4,730	12.5
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	33.7 *J*		6.1	92.6 *R*	22,600	54.3
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	18.3 *J*		3.5	56.0 *R*	14,200	40.6
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	35.2 *J*		6.2	93.4 *R*	19,700	86.2
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	91.2 *J*		13.1 *J*	241 *J*	42,500 *J*	133 *J*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	200 *J*		13.5 *J*	380 *J*	64,500 *J*	214 *J*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	223 *J*		13.8 *J*	456 *J*	55,600 *J*	432 *J*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	142 *J*		11.2 *J*	351 *J*	43,900 *J*	188 *J*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	114 *J*		11.5 *J*		42,400 *J*	229 *J*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	206 *J*		13.7 *J*	441 *R*	65,600 *J*	308 *J*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	189 *J*		13.1 *J*	465 *R*	55,500 *J*	357 *J*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	235 *J*		13.2 *J*	472 *R*	68,900 *J*	292 *J*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	79.5		7.3	255	29,600	104
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	182 *J*		12.6 *J*	341 *J*	54,000 *J*	195 *J*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	175		13.0	332	51,000	244
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	119 *J*		9.7 *J*	323 *J*	41,300 *J*	329 *J*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	143 *J*		12.8 *J*	311 *J*	56,000 *J*	175 *J*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	153 *J*		11.2 *J*	380 *J*	48,300 *J*	222 *J*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	210 *J*		14.2 *J*	387 *J*	53,500 *J*	374 *J*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	173 *J*		12.3 *J*	347 *J*	58,100 *J*	199 *J*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	175 *J*		12.4 *J*	343 *J*	51,900 *J*	196 *J*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	132 *J*		13.0 *J*	441 *J*	51,100 *J*	342 *J*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	82.6 *J*		14.5 *J*	339 *R*	46,400 *J*	231 *J*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	219 *J*		14.1 *J*	424 *J*	52,000 *J*	374 *J*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	207 *J*		18.7 *J*	674 *R*	77,300 *J*	235 *J*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	238 *J*		15.9 *J*	447 *R*	61,300 *J*	335 *J*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	174 *J*		13.9 *J*	489 *R*	51,600 *J*	419 *J*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	218 *J*		19.7 *J*	784 *R*	60,200 *J*	311 *J*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	191 *J*		13.6 *J*	458 *R*	49,600 *J*	253 *J*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	180 *J*		13.1 *J*	398 *R*	50,800 *J*	222 *J*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	188 *J*		13.2 *J*	438 *R*	49,000 *J*	237 *J*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	191 *J*		12.8 *J*	334 *R*	52,300 *J*	226 *J*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	73.1 *J*		14.0 *J*	360 *R*	46,100 *J*	207 *J*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	67.1 *J*		14.5 *J*	283 *R*	46,000 *J*	199 *J*
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	83.1 *J*		13.5 *J*	425 *R*	46,700 *J*	213 *J*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	130 *J*		12.6 *J*	325 *R*	46,100 *J*	225 *J*

Table E-5. Inorganic analyte results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Chromium (mg/kg dry)	Chromium, hexavalent (mg/kg dry)	Cobalt (mg/kg dry)	Copper (mg/kg dry)	Iron (mg/kg dry)	Lead (mg/kg dry)
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	67.2 *J*		11.5 *J*	278 *R*	40,600 *J*	154 *J*
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	67.4 *J*		12.9 *J*	241 *R*	42,400 *J*	135 *J*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	140 *J*		13.6 *J*	431 *R*	52,600 *J*	348 *J*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	77.6 *J*		12.9 *J*	303 *J*	35,600 *J*	185 *J*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	39.8		9.9	117	29,800	82.7
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	28.9		8.5	21.5	31,300	18.0
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	64.9 *J*		12.5 *J*	258 *J*	33,700 *J*	163 *J*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	60.2 *J*		12.1 *J*	165 *R*	39,700 *J*	104 *J*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	52.2		13.5	183 *R*	36,700	125 *J*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	32.4		9.1	24.1 *R*	33,800	20.2 *J*
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	65.1		11.7	231 *R*	39,700	147 *J*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	106 *J*		13.6 *J*	417 *J*	50,100 *J*	246 *J*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	46.8 *J*		12.0	189 *J*	30,300 *J*	131 *J*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	48.3 *J*		12.9	192 *J*	33,100	133 *J*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	65.8 *J*		12.3 *J*	284 *J*	37,800 *J*	174 *J*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	202 *J*		12.4 *J*	298 *R*	41,900 *J*	163 *J*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	129 *J*		11.8 *J*	379 *R*	39,000 *J*	162 *J*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	169 *J*		14.3 *J*	619 *R*	47,000 *J*	217 *J*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	147 *J*		11.8 *J*	350 *R*	38,000 *J*	161 *J*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	75.6 *J*		15.9 *J*	231 *J*	44,200 *J*	135 *J*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	23.9 *J*		5.6	30.0 *J*	24,100	18.0 *J*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	24.8 *J*		7.0	16.1 *J*	31,300	10.9 *J*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	87.2 *J*		9.8 *J*	134 *J*	30,100 *J*	83.1 *J*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	73.6 *J*		13.3 *J*	182 *J*	42,400 *J*	109 *J*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	21.5 *J*		5.9	37.1 *J*	33,200 *J*	19.0 *J*
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	27.0 *J*		13.4	26.4 *J*	39,300 *J*	17.5 *J*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	50.8 *J*		9.1 *J*	121 *J*	35,200 *J*	105 *J*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	39.2		8.6	107 *R*	29,100	68.8 *J*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	32.5		9.4	13.0 *R*	34,900	14.1 *J*
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	34.9		10	12.7 *R*	37,800	13.5 *J*
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	43.2		13.8	61.4 *R*	35,200	65.7 *J*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	25.3		5.9	42.8 *R*	22,200	32.9 *J*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	32.7		12.1	24.3 *R*	32,800	37.2 *J*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	32.8		9.3	15.7 *R*	34,100	17.2 *J*
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	54.9		14.9	110 *R*	39,200	101 *J*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	160 *J*		12.2 *J*	345 *J*	56,000 *J*	193 *J*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	292 *J*		12.1 *J*	955 *J*	42,400 *J*	222 *J*
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	478 *J*		13.0 *J*	1,420 *J*	41,700 *J*	210 *J*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	163 *J*		8.7 *J*	320 *J*	32,700 *J*	162 *J*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	214 *J*		11.2 *J*	261 *J*	42,400 *J*	154 *J*

Table E-5. Inorganic analyte results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Chromium (mg/kg dry)	Chromium, hexavalent (mg/kg dry)	Cobalt (mg/kg dry)	Copper (mg/kg dry)	Iron (mg/kg dry)	Lead (mg/kg dry)
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	294 *J*		12.3 *J*	1,020 *J*	41,300 *J*	226 *J*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	517 *J*		13.1 *J*	1,440 *J*	42,000 *J*	200 *J*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	161 *J*		8.4 *J*	321 *J*	32,500 *J*	166 *J*
SD01	Ruplnd	10/23/1997	SD01	0	0	0	8.5	3.08 *U*	0.86	102	7,730	64.5
SD02	Ruplnd	10/24/1997	SD02	0	0	0	7.1		1.7	40.4	5,530	14.2
SD03	upland	10/23/1997	SD03	0	0	0	945		7.0	816	31,900	131
SD04	upland	10/24/1997	SD04	0	0	0	31.3		8.0	93.9	34,800	125
SD05	upland	10/23/1997	SD05	0	0	0	23.5	1.51 *U*	3.1	92.6	22,100	32.3
SD06	upland	10/23/1997	SD06	0	0	0	126 *J*	5.67 *UJ*	12.6 *J*	955 *J*	123,000 *J*	226 *J*
SD07	upland	10/23/1997	SD07	0	0	0	105 *J*	3.06 *UJ*	11.8 *J*	219 *J*	250,000 *J*	578 *J*
SD08	upland	10/23/1997	SD08	0	0	0	56.1		5.8	61.4	33,000	63.9
SD09	upland	10/28/1997	SD09	0	0	0	74.1 *J*	2.49 *UJ*	12.1 *J*	379 *J*	22,900 *J*	185 *J*
SD10	upland	10/28/1997	SD10	0	0	0	76.0 *J*		10.7 *J*	284 *J*	38,400 *J*	160 *J*
SD11	upland	10/28/1997	SD11	0	0	0	303 *J*		7.2 *J*	461 *J*	30,500 *J*	261 *J*
SD12	upland	10/28/1997	SD12	0	0	0	96.6 *J*		6.3 *J*	249 *J*	31,900 *J*	240 *J*
SD13	upland	10/27/1997	SD13	0	0	0	148 *J*		18.2 *J*	552	157,000 *J*	67.8
SD14	upland	10/27/1997	SD14	0	0	0	33.6 *J*		5.5 *J*	190	20,300 *J*	79.9
SD15	upland	10/24/1997	SD15	0	0	0	213	1.18 *U*	3.0	542	36,600	390
SD16	upland	10/27/1997	SD16	0	0	0	53.4 *J*		5.9	379	25,900 *J*	185
SD17	upland	10/27/1997	SD17	0	0	0	36.6 *J*	2.00 *U*	8.1 *J*	234 *J*	24,100 *J*	144 *J*
SD18	upland	10/29/1997	SD18	0	0	0	262 *J*		25.8 *J*	659 *J*	132,000 *J*	98.5 *J*
SD19	upland	10/24/1997	SD19	0	0	0	25.0	1.25 *U*	2.4	55.9	19,800	33.2
SD20	upland	10/24/1997	SD20	A	0	0	101	1.13 *U*	2.5	262	8,560	146
SD20	upland	10/24/1997	SD20	B	0	0	115	1.66	2.3	312	9,240	160
SD21	Ruplnd	10/24/1997	SD21	0	0	0	9.4	1.12 *U*	0.63	36.5	5,010	19.2
SD22	upland	10/24/1997	SD22	0	0	0	357	1.23 *U*	8.8	2,350	47,100	1,020
SD23	upland	10/24/1997	SD23	0	0	0	124		1.6	280	30,000	74.4
SD23	upland	10/24/1997	SD23	0	0	0	124		1.6	280	30,000	74.4
SD24	river	10/27/1997	SD24	0	0	0	66.9 *J*		15.8 *J*	275 *J*	44,600 *J*	78.3 *J*
SD25	river	10/29/1997	SD25	0	0	0	271 *J*		13.5 *J*	1,530 *J*	52,000 *J*	139 *J*
SD26	marsh	10/29/1997	SD26	0	0	0	147 *J*		10.0 *J*	983 *J*	29,100 *J*	169 *J*
SD27	river	10/30/1997	SD27	0	0	0	2,340 *J*		33.3 *J*	3,560 *J*	54,200 *J*	349 *J*
SD28	upland	10/28/1997	SD28	0	0	0	55.4 *J*		8.3 *J*	171 *J*	28,400 *J*	239 *J*
SD29	upland	10/27/1997	SD29	0	0	0	20.1 *J*	1.44 *U*	2.6	37.2	16,600 *J*	17.9
SD30	upland	10/29/1997	SD30	0	0	0	50.9 *J*		7.9	196	31,500 *J*	50.9
SD31	river	10/30/1997	SD31	0	0	0	882 *J*		17.5 *J*	1,950 *J*	55,400 *J*	178 *J*
SD32	upland	10/28/1997	SD32	0	0	0	205 *J*		29.4 *J*	677 *J*	133,000 *J*	138 *J*
SD33	marsh	10/28/1997	SD33	0	0	0	201 *J*		31.8 *J*	502 *J*	326,000 *J*	90.7 *J*
SD34	upland	10/30/1997	SD34	0	0	0	6,260		50.3	5,300	23,800	89.4
SD35	marsh	10/30/1997	SD35	0	0	0	92.1 *J*		11.1 *J*	246 *J*	64,000 *J*	247 *J*

Table E-5. Inorganic analyte results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Chromium (mg/kg dry)	Chromium, hexavalent (mg/kg dry)	Cobalt (mg/kg dry)	Copper (mg/kg dry)	Iron (mg/kg dry)	Lead (mg/kg dry)
SD36	marsh	10/30/1997	SD36	0	0	0	778		2.2	357	48,500	197
SD37	marsh	10/30/1997	SD37	A	0	0	18.1		1.4	18.6	26,600	20.6
SD37	marsh	10/30/1997	SD37	B	0	0	21.7		1.3	20.6	32,400	18.7
SD38	river	6/24/1998	SD38	0	0	0	419 *J*		20.2 *J*	1,760 *J*	57,900 *J*	253 *J*
SD39	river	6/24/1998	SD39	A	0	0	80.6 *J*		14.0 *J*	391 *J*	48,100 *J*	191 *J*
SD39	river	6/24/1998	SD39	B	0	0	70.9 *J*		13.7 *J*	337 *J*	44,000 *J*	178 *J*
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	223 *J*		11.6 *J*	311 *J*	36,000 *J*	289 *J*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	87.1		11.1	187	45,500	183
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	91.9		16.7	388	47,600	200
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	102		13.8	179	48,100	229
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	227 *J*		10.2 *J*	230 *J*	43,800 *J*	328 *J*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	89.5		12.8	769	40,900	128
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	76.0		11.7	327	72,200	120
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	113 *J*		14.3 *J*	385 *J*	50,500 *J*	221 *J*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	223 *J*		32.2 *J*	371 *J*	115,000 *J*	338 *J*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	79.9		10	691	33,600	186
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	85.1		20.7	575	47,400	188
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	66.4		8.0	176	28,800	151
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	182 *J*		15.4 *J*	334 *J*	79,400 *J*	276 *J*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	93.4		11.0	280	43,200	145
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	95.8		14.8	406	52,100	180
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	112		11.4	220	54,800	274
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	261		33.9	646	263,000	99.5
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	95.7		11.9	390	51,800	188
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	93.2		14.7	411	53,400	181
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	115		11.9	276	63,600	209
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	4,950 *J*		14.8 *J*	4,040 *J*	82,000 *J*	323 *J*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	111		12.5	490	43,200	220
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	92.5		15.6	454	51,800	196
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	267		9.5	776	44,800	227
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	55.9		5.6	115	27,300	147
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	66.0		11.4	365	33,500	117
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	31.1		10.2	44.6	30,400	41.2
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	81.8		8.0	189	37,800	188
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	779 *J*		20.6 *J*	2,590 *J*	64,100 *J*	220 *J*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	89.4 *J*		16.8 *J*	323 *J*	45,800 *J*	198 *J*
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	62.4		12.0	173	35,000	90.1
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	152 *J*		30.8 *J*	601 *J*	78,800 *J*	311 *J*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	1,220 *J*		11.5 *J*	1,600 *J*	55,800 *J*	306 *J*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	115 *J*		14.3 *J*	398 *J*	41,500 *J*	75.6 *J*

Table E-5. Inorganic analyte results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Chromium (mg/kg dry)	Chromium, hexavalent (mg/kg dry)	Cobalt (mg/kg dry)	Copper (mg/kg dry)	Iron (mg/kg dry)	Lead (mg/kg dry)
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	53.4		9.6	108	33,400	21.7
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	2,220 *J*		12.0 *J*	4,940 *J*	24,000 *J*	159 *J*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	352 *J*		4.7 *J*	1,040 *J*	37,400 *J*	310 *J*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	114		9.2	82.1	36,000	29.8
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	55.8		11.6	71.2	32,900	53.1
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	1,910 *J*		7.5 *J*	1,970 *J*	43,700 *J*	603 *J*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	502		1.4	221	27,300	149
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	161 *J*		18.0 *J*	688 *J*	29,300 *J*	165 *J*
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	102 *J*		13.7 *J*	433 *J*	42,700 *J*	158 *J*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	1,870		4.5	5,080	33,800	264
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	303		38.2	705	306,000	103
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	96.6		11.1	350	52,100	197
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	99.2		15.8	455	60,900	197
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	120		12.1	207	59,700	230

Note:
Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
N - spike sample recovery not within control limits
U - undetected at detection limit shown
R - rejected

Table E-5. Inorganic analyte results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Manganese (mg/kg dry)	Mercury (mg/kg dry)	Nickel (mg/kg dry)	Selenium (mg/kg dry)	Silver (mg/kg dry)	Thallium (mg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	134	0.41	18.5	1.6	2.1	0.77 *U*
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	318	1.2	36.9	3.8	2.2	0.79 *U*
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	573	0.88	31.4	0.69 *U*	1.8	0.91
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	245	0.85	30.7	3.1	3.5	0.77 *U*
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	15.6	0.060 *U*	2.6	0.45 *U*	0.15	0.52 *U*
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	152	0.43	16.2	2.2 *J*	1.4	0.66 *U*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	80.9	0.34	12.6	1.9 *J*	0.56	0.53 *U*
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	92.5	0.34	12.8	1.6 *J*	1.8	0.71 *U*
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	230 *J*	1.5 *J*	35.8 *J*	4.7 *J*	6.1 *J*	1.1 *UJ*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	227 *J*	2.5 *J*	31.6 *J*	13.9 *J*	10.6 *J*	1.0 *UJ*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	282 *J*	3.1 *J*	41.6 *J*	41.0 *J*	6.6 *J*	0.90 *UJ*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	208 *J*	2.9 *J*	34.4 *J*	6.2 *J*	10 *J*	1.1 *UJ*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	241 *J*	2.2 *J*	36.5 *J*	15.4 *J*	6.8 *J*	1.1 *UJ*
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	278 *J*	2.6 *J*	41.0 *J*	23.5 *J*	10.3 *J*	0.99 *UJ*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	272 *J*	2.6 *J*	44.3 *J*	27.0 *J*	8.5 *J*	0.97 *UJ*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	248 *J*	2.8 *J*	38.1 *J*	22.2 *J*	12.0 *J*	1.1 *UJ*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	132	1.4	21.7	3.5	5.6	0.83 *U*
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	223 *J*	2.4 *J*	31.0 *J*	9.4 *J*	10.4 *J*	0.90 *UJ*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	261	1.9	35.9	19.9	6.3	0.82 *U*
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	161 *J*	3.0 *J*	28.9 *J*	7.4 *J*	8.5 *J*	0.90 *UJ*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	245 *J*	2.2 *J*	35.4 *J*	7.1 *J*	6.4 *J*	1.2 *UJ*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	205 *J*	3.0 *J*	33.6 *J*	9.0 *J*	9.7 *J*	1.1 *UJ*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	270 *J*	2.4 *J*	40.7 *J*	33.4 *J*	6.0 *J*	0.92 *UJ*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	229 *J*	4.7 *J*	34.2 *J*	7.4 *J*	10.6 *J*	1.2 *UJ*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	225 *J*	2.6 *J*	33.2 *J*	6.9 *J*	9.1 *J*	1.5 *UJN*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	336 *J*	1.8 *J*	51.5 *J*	26.1 *J*	7.1 *J*	0.91 *UJN*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	460 *J*	1.4 *J*	62.6 *J*	13.8 *J*	4.4 *J*	0.85 *UJ*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	270 *J*	2.6 *J*	42.3 *J*	30.5 *J*	8.5 *J*	1.0 *UJN*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	280 *J*	3.2 *J*	55.0 *J*	11.1 *J*	7.7 *J*	1.7 *UJ*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	281 *J*	3.3 *J*	43.2 *J*	27.4 *J*	9.9 *J*	1.1 *UJ*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	300 *J*	2.4 *J*	47.8 *J*	34.0 *J*	7.0 *J*	0.88 *UJ*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	306 *J*	4.3 *J*	53.5 *J*	12.9 *J*	8.0 *J*	1.3 *UJ*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	253 *J*	3.7 *J*	41.8 *J*	12.0 *J*	12.2 *J*	1.1 *UJ*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	226 *J*	3.0 *J*	35.7 *J*	12.0 *J*	11.2 *J*	0.97 *UJ*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	243 *J*	3.5 *J*	38.8 *J*	10.8 *J*	12.2 *J*	1.1 *UJ*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	251 *J*	1.6 *J*	32.2 *J*	20.4 *J*	5.5 *J*	1.2 *UJ*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	455 *J*	1.6 *J*	72.2 *J*	16.8 *J*	4.3 *J*	0.92 *UJ*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	471 *J*	1.8 *J*	65.7 *J*	13.1 *J*	4.1 *J*	0.87 *UJ*
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	365 *J*	1.7 *J*	66.8 *J*	14.7 *J*	5.1 *J*	0.96 *UJ*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	246 *J*	1.4 *J*	37.4 *J*	8.5 *JN*	6.3 *J*	1.1 *UJ*

Table E-5. Inorganic analyte results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Manganese (mg/kg dry)	Mercury (mg/kg dry)	Nickel (mg/kg dry)	Selenium (mg/kg dry)	Silver (mg/kg dry)	Thallium (mg/kg dry)
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	390 *J*	1.7 *J*	50.3 *J*	8.5 *JN*	2.7 *J*	0.82 *UJ*
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	390 *J*	1.1 *J*	56.3 *J*	6.6 *JN*	2.5 *J*	0.86 *UJ*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	291 *J*	1.2 *J*	49.7 *J*	21.6 *JN*	5.4 *J*	0.92 *UJ*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	238 *J*	2.0 *J*	44.4 *J*	6.6 *J*	3.0 *J*	1.0 *UJ*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	284	0.53	28.9	3.3	1.6	0.75 *U*
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	283	0.090 *U*	20.6	0.72	1.0	0.75 *U*
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	326 *J*	1.5 *J*	41.1 *J*	7.0 *J*	2.5 *J*	0.87 *UJ*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	316 *J*	0.95 *J*	38.5 *J*	2.9 *JN*	2.1 *J*	0.85 *UJ*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	347	1.1	44.8 *J*	1.7 *JN*	1.5	0.73 *U*
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	322	0.090 *U*	23.2 *J*	0.63 *UJN*	0.49	0.73 *U*
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	308	1.9	40.5 *J*	5.3 *JN*	1.9	0.82 *U*
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	285 *J*	1.8 *JN*	64.6 *J*	12.8 *JN*	5.3 *J*	1.1 *UJ*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	349 *J*	1.1 *JN*	39.6 *J*	1.7 *JN*	2.1	0.78 *U*
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	319 *J*	1.1 *JN*	42.0 *J*	2.0 *JN*	2.0	0.76 *U*
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	266 *J*	1.7 *JN*	50.6 *J*	7.1 *JN*	2.9 *J*	0.91 *UJ*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	216 *J*	1.3 *J*	33.0 *J*	2.3 *JN*	7.2 *J*	1.1 *UJ*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	207 *J*	1.8 *J*	34.8 *J*	2.7 *JN*	7.8 *J*	0.97 *UJ*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	257 *J*	2.6 *J*	48.6 *J*	5.4 *JN*	9.3 *J*	1.1 *UJ*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	204 *J*	1.6 *J*	33.7 *J*	2.3 *JN*	8.0 *J*	1.1 *UJ*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	223 *J*	1.3 *JN*	31.5 *J*	1.1 *UJN*	6.5 *J*	1.3 *UJ*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	124 *J*	0.18 *JN*	13.2	0.60 *UJN*	1.0	0.70 *U*
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	168 *J*	0.10 *JN*	16.2 *J*	0.60 *UJN*	1.0	0.70 *U*
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	125 *J*	0.89 *JN*	20.8 *J*	0.80 *UJN*	5.2 *J*	0.93 *UJ*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	233 *J*	1.2 *JN*	30.4 *J*	1.2 *UJN*	5.4 *J*	1.3 *UJ*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	187 *J*	0.15 *JN*	10.3	0.49 *UJN*	1.4	0.58
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	108 *J*	0.17 *JN*	50.5 *J*	2.7 *JN*	1.4	0.56 *U*
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	147 *J*	0.72 *JN*	19.7 *J*	0.84 *UJN*	3.6 *J*	0.97 *UJ*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	260	0.75	26.1 *J*	1.2 *JN*	1.4	0.71 *U*
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	389	0.080 *U*	23.1 *J*	0.64 *UJN*	0.42	0.95
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	390	0.090 *U*	24.5 *J*	0.66 *UJN*	0.41	0.78 *U*
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	345	0.50	30.8 *J*	0.65 *UJN*	0.72	0.76 *U*
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	218	0.27	15.8 *J*	0.57 *UJN*	0.63	0.66 *U*
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	348	0.15	25.2 *J*	0.62 *UJN*	0.45	0.72 *U*
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	347	0.090 *U*	22.3 *J*	0.63 *UJN*	0.45	0.73 *U*
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	410	0.80	37.1 *J*	0.68 *UJN*	0.91	0.80 *U*
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	230 *J*	2.6 *JN*	37.0 *J*	2.0 *JN*	18.1 *J*	1.2 *UJ*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	208 *J*	2.6 *JN*	51.7 *J*	3.9 *JN*	9.6 *J*	1.0 *UJ*
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	247 *J*	1.7 *JN*	54.0 *J*	5.7 *JN*	6.6 *J*	0.96 *UJ*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	140 *J*	1.7 *JN*	27.6 *J*	2.4 *JN*	16.4 *J*	0.94 *UJ*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	187 *J*	2.4 *JN*	29.4 *J*	1.7 *JN*	16.5 *J*	1.1 *UJ*

Table E-5. Inorganic analyte results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Manganese (mg/kg dry)	Mercury (mg/kg dry)	Nickel (mg/kg dry)	Selenium (mg/kg dry)	Silver (mg/kg dry)	Thallium (mg/kg dry)
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	207 *J*	2.5 *JN*	54.0 *J*	3.7 *JN*	8.3 *J*	0.99 *UJ*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	256 *J*	1.9 *JN*	51.4 *J*	5.1 *JN*	7.0 *J*	0.95 *UJ*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	132 *J*	2.1 *JN*	26.7 *J*	2.2 *JN*	23.4 *J*	0.93 *UJ*
SD01	Ruplnd	10/23/1997	SD01	0	0	0	4.4	0.14 *J*	4.8	0.96	0.61	0.91 *U*
SD02	Ruplnd	10/24/1997	SD02	0	0	0	6.4	0.28 *J*	3.8	0.67 *U*	0.80	0.85 *U*
SD03	upland	10/23/1997	SD03	0	0	0	116	2.3	31.5 *J*	0.86 *U*	1.1	1.1 *U*
SD04	upland	10/24/1997	SD04	0	0	0	282	0.52	16.0 *J*	0.80 *U*	4.9	1.0 *U*
SD05	upland	10/23/1997	SD05	0	0	0	64.1	3.6	8.2	0.66 *U*	0.84	0.83 *U*
SD06	upland	10/23/1997	SD06	0	0	0	221 *J*	4.7 *J*	42.6 *J*	2.4 *UJ*	5.6 *J*	3.0 *UJ*
SD07	upland	10/23/1997	SD07	0	0	0	486 *J*	9.6 *J*	31.6 *J*	1.7 *UJ*	14.3 *J*	2.1 *UJ*
SD08	upland	10/23/1997	SD08	0	0	0	89.5	7.7	15.9 *J*	0.70 *U*	0.68	0.88 *U*
SD09	upland	10/28/1997	SD09	0	0	0	89.9 *J*	11.9 *J*	35.4 *J*	0 *R*	7.4 *J*	1.5 *UJ*
SD10	upland	10/28/1997	SD10	0	0	0	167 *J*	7.5 *J*	33.4 *J*	0 *UR*	6.2 *J*	1.5 *UJ*
SD11	upland	10/28/1997	SD11	0	0	0	87.1 *J*	19.4 *J*	19.9 *J*	0 *UR*	4.5 *J*	2.2 *UJ*
SD12	upland	10/28/1997	SD12	0	0	0	113 *J*	12.4 *J*	15.1 *J*	0 *R*	4.6 *J*	1.8 *UJ*
SD13	upland	10/27/1997	SD13	0	0	0	1,280 *J*	0.18 *J*	166 *J*	0 *UR*	0.90	6.9
SD14	upland	10/27/1997	SD14	0	0	0	80.5 *J*	0.91 *J*	29.5 *J*	0 *UR*	17.3	0.95 *U*
SD15	upland	10/24/1997	SD15	0	0	0	62.8	5.3	24.2 *J*	2.7	54.8	0.65 *U*
SD16	upland	10/27/1997	SD16	0	0	0	112 *J*	7.7 *J*	33.9 *J*	0 *UR*	61.0	1.0 *U*
SD17	upland	10/27/1997	SD17	0	0	0	99.4 *J*	6.7 *J*	34.9 *J*	0 *UR*	42.8 *J*	1.3 *UJ*
SD18	upland	10/29/1997	SD18	0	0	0	1,200 *J*	5.9 *J*	342 *J*	0 *R*	33.4 *J*	2.2 *J*
SD19	upland	10/24/1997	SD19	0	0	0	65.8	0.70	16.3 *J*	0.56 *U*	8.4	0.71 *U*
SD20	upland	10/24/1997	SD20	A	0	0	42.9	1.7	15.3 *J*	0.47 *U*	17.8	0.60 *U*
SD20	upland	10/24/1997	SD20	B	0	0	47.1	1.7	17.9 *J*	0.50 *U*	25.0	0.63 *U*
SD21	Ruplnd	10/24/1997	SD21	0	0	0	5.9	0.14 *J*	1.3	0.56	1.8	0.64 *U*
SD22	upland	10/24/1997	SD22	0	0	0	199	5.2	184 *J*	2.7	321	0.66 *U*
SD23	upland	10/24/1997	SD23	0	0	0	30.7	1.7	11.9 *J*	0.52 *U*	31.4	0.66 *U*
SD23	upland	10/24/1997	SD23	0	0	0	30.7	1.7	11.9 *J*	0.52 *U*	31.4	0.66 *U*
SD24	river	10/27/1997	SD24	0	0	0	97.9 *J*	1.0 *J*	16.7 *J*	0 *UR*	4.1 *J*	2.0 *UJ*
SD25	river	10/29/1997	SD25	0	0	0	393 *J*	1.7 *J*	28.4 *J*	0 *R*	5.3 *J*	1.9 *UJ*
SD26	marsh	10/29/1997	SD26	0	0	0	121 *J*	7.0 *J*	32.5 *J*	0 *UR*	6.9 *J*	4.1 *UJ*
SD27	river	10/30/1997	SD27	0	0	0	131 *J*	6.0 *J*	119 *J*	8.0 *J*	0 *R*	2.5 *UJ*
SD28	upland	10/28/1997	SD28	0	0	0	135 *J*	6.1 *J*	18.6 *J*	0 *R*	7.6 *J*	1.8 *UJ*
SD29	upland	10/27/1997	SD29	0	0	0	55.6 *J*	0.080 *J*	7.7	0 *UR*	0.40	0.70 *U*
SD30	upland	10/29/1997	SD30	0	0	0	344 *J*	2.5 *J*	66.7 *J*	0 *UR*	8.8	0.82 *U*
SD31	river	10/30/1997	SD31	0	0	0	327 *J*	2.2 *J*	54.4 *J*	7.0 *J*	6.0 *J*	1.9 *UJ*
SD32	upland	10/28/1997	SD32	0	0	0	1,510 *J*	8.8 *J*	442 *J*	0 *UR*	60.0 *J*	3.3 *J*
SD33	marsh	10/28/1997	SD33	0	0	0	2,140 *J*	8.7 *J*	551 *J*	0 *UR*	10.3 *J*	7.2 *J*
SD34	upland	10/30/1997	SD34	0	0	0	2,080	114 *J*	463 *J*	2.0	0 *R*	1.1 *U*
SD35	marsh	10/30/1997	SD35	0	0	0	263 *J*	22.5 *J*	29.7 *J*	9.8 *J*	0 *R*	1.4 *UJ*

Table E-5. Inorganic analyte results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Manganese (mg/kg dry)	Mercury (mg/kg dry)	Nickel (mg/kg dry)	Selenium (mg/kg dry)	Silver (mg/kg dry)	Thallium (mg/kg dry)
SD36	marsh	10/30/1997	SD36	0	0	0	46.2	4.4 *J*	10.1 *J*	1.7	0 *R*	0.87 *U*
SD37	marsh	10/30/1997	SD37	A	0	0	36.8	0.47 *J*	6.2 *J*	0.61 *U*	2.1	0.77 *U*
SD37	marsh	10/30/1997	SD37	B	0	0	34.3	0.24 *J*	3.3 *J*	0.65	0 *R*	0.69 *U*
SD38	river	6/24/1998	SD38	0	0	0	220 *J*	7.0 *J*	64.5 *J*	11.8 *JN*	1.8 *UJ*	3.7 *UJ*
SD39	river	6/24/1998	SD39	A	0	0	508 *J*	1.5 *J*	71.3 *J*	13.3 *JN*	1.2 *UJ*	2.4 *UJ*
SD39	river	6/24/1998	SD39	B	0	0	499 *J*	1.7 *J*	67.5 *J*	11.8 *JN*	1.7 *UJ*	3.4 *UJ*
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	158 *J*	385 *J*	26.2 *J*	4.2 *J*	4.8 *J*	0.90 *UJ*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	245	3.7	33.5	8.1 *J*	5.0	0.98
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	333	2.4	67.0	9.3 *J*	5.4	1.3
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	272	17.6	34.3	8.1 *J*	4.8	1.7
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	143 *J*	133 *J*	26.2 *J*	6.0 *J*	5.7 *J*	0.99 *UJ*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	207	2.8	49.3	9.5	6.0	1.3
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	159	2.1	37.9	5.3	5.5	2.3
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	225 *J*	33.1 *J*	41.0 *J*	9.3 *J*	5.7 *J*	2.3 *J*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	627 *J*	184 *J*	49.9 *J*	1.4 *UJ*	9.2 *J*	3.0 *J*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	193	4.9	38.2	9.9	5.2	0.77 *U*
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	485	1.9	92.6	8.5	5.2	0.81
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	148	3.1	23.0	6.7	3.0	0.71 *U*
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	480 *J*	39.1 *J*	93.3 *J*	5.8 *J*	10.3 *J*	2.2 *J*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	226	2.2	41.1	8.5	5.5	1.9
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	477	1.7	66.1	9.3	6.0	2.2
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	231	3.9	49.2	7.5	6.2	1.7
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	2,120	9.2	572	0.66 *U*	40.3	6.3
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	278	2.0	57.2	8.5	5.1	1.6
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	521	1.6	71.0	8.2	5.6	1.5
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	400	2.0	94.7	4.9	7.1	1.6
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	404 *J*	21.1 *J*	44.9 *J*	4.5 *J*	8.6 *J*	1.1 *UJ*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	219	1.9	50.5	9.9	6.5	1.3
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	508	1.9	71.5	11.1	6.7	2.1
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	190	2.7	32.0	7.5	6.0	1.2
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	156	4.2	16.5	3.6	3.9	0.61 *U*
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	186	1.2	39.6	6.9	3.3	0.67 *U*
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	271	0.11	25.5	0.98	1.2	0.69 *U*
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	153	1.6	25.9	8.8	4.0	0.68 *U*
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	369 *J*	3.3 *J*	89.0 *J*	7.9 *J*	10.7 *J*	1.9 *UJ*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	409 *J*	2.0 *J*	55.8 *J*	8.3 *J*	3.0 *J*	1.2 *UJ*
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	329	0.60	35.1	2.2	1.8	0.72 *U*
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	885 *J*	3.2 *J*	121 *J*	19.4 *J*	6.5 *J*	1.9 *UJ*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	273 *J*	4.4 *J*	46.4 *J*	4.3 *J*	8.3 *J*	2.2 *UJ*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	433 *J*	0.53 *J*	76.9 *J*	4.7 *J*	2.1 *J*	0.87 *UJ*

Table E-5. Inorganic analyte results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Manganese (mg/kg dry)	Mercury (mg/kg dry)	Nickel (mg/kg dry)	Selenium (mg/kg dry)	Silver (mg/kg dry)	Thallium (mg/kg dry)
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	306	0.12	25.4	1.3	1.2	0.77 *U*
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	85.0 *J*	2.3 *J*	73.3 *J*	7.7 *J*	2.4 *J*	0.92 *UJ*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	93.6 *J*	6.0 *J*	28.3 *J*	0.83 *UJ*	63.2 *J*	2.5 *J*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	258	0.52	26.6	0.62 *U*	1.9	0.72 *U*
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	313	0.39	29.8	0.63 *U*	1.3	1.4
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	81.2 *J*	8.2 *J*	37.7 *J*	3.1 *J*	34.7 *J*	1.0 *UJ*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	30.4	2.4	5.1	0.45 *U*	29.9	1.4
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	194 *J*	1.3 *J*	143 *J*	4.7 *J*	10.5 *J*	0.91 *UJ*
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	398 *J*	1.4 *J*	62.4 *J*	7.2 *J*	7.0 *J*	1.0 *J*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	89.4	4.9	43.7	0.77	45.3	0.68 *U*
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	2,520	6.0	671	0.68 *U*	39.0	6.8
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	262	1.9	48.8	9.0	6.2	2.0
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	584	1.8	78.4	11.4	7.6	2.2
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	303	2.2	78.2	6.3	7.4	1.7

Note:
- Rriver - river reference zone
- Ruplnd - upland reference zone
- *J* - estimated
- *N* - spike sample recovery not within control limits
- *U* - undetected at detection limit shown
- *R* - rejected

Table E-5. Inorganic analyte results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Vanadium (mg/kg dry)	Zinc (mg/kg dry)	Cyanide (mg/kg dry)	Calcium (mg/kg dry)	Magnesium (mg/kg dry)	Potassium (mg/kg dry)	Sodium (mg/kg dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	36.3	162	0.090 *U*	1,250	3,400	1,800	3,980
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	43.0	216	0.63	1,810	6,070	3,200	4,090
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	46.5	176	0.64	1,890	6,410	3,020	4,170
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	63.6	246	0.44	4,690	5,100	2,530	4,410
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	13.3	30.5	0.090	647 *U*	543	359	575
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	35.3	118	0.24	1,480	3,040 *J*	1,440	2,560 *R*
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	27.2	62.9	0.39	656 *U*	1,630 *J*	821	1,140
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	46.3	282	0.090 *U*	1,090	2,250 *J*	1,220	2,980 *R*
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	75.3 *J*	381 *J*	1.1 *J*	2,700 *J*	6,280 *J*	3,090 *J*	8,480 *J*
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	211 *J*	499 *J*	1.6 *J*	3,340 *J*	5,470 *J*	2,470 *J*	6,960 *J*
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	164 *J*	388 *J*	0.58 *J*	2,290 *J*	6,450 *J*	2,570 *J*	5,870 *J*
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	105 *J*	479 *J*	2.1 *J*	4,090 *J*	5,840 *J*	2,790 *J*	7,760 *J*
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	87.3 *J*	389 *J*	0.99 *J*	43,300 *J*	6,120 *J*	2,450 *J*	
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	187 *J*	488 *J*	0.85 *J*	3,220 *J*	6,650 *J*	2,880 *J*	7,040 *R*
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	148 *J*	442 *J*	1.1 *J*	2,620 *J*	6,490 *J*	2,460 *J*	6,570 *R*
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	208 *J*	548 *J*	0.40 *J*	3,500 *J*	6,260 *J*	2,370 *J*	7,820 *R*
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	64.0	289	0.93	2,080	3,490	1,660	5,520
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	175 *J*	471 *J*	0.42 *J*	2,770 *J*	5,160 *J*	2,240 *J*	5,830 *J*
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	147	350	0.47	1,770	5,590	2,830	4,760
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	107 *J*	394 *J*	1.2 *J*	2,520 *J*	4,520 *J*	2,040 *J*	5,880 *J*
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	118 *J*	322 *J*	2.3 *J*	2,920 *J*	5,730 *J*	2,540 *J*	10,100 *J*
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	119 *J*	527 *J*	1.8 *J*	3,320 *J*	5,940 *J*	2,440 *J*	8,860 *J*
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	141 *J*	363 *J*	1.6 *J*	2,580 *J*	6,520 *J*	2,750 *J*	6,660 *J*
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	156 *J*	462 *J*	2.2 *J*	3,400 *J*	6,220 *J*	2,610 *J*	11,600 *J*
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	165 *J*	337 *J*	4.6 *JN*	3,660 *J*	6,690 *J*	2,850 *J*	15,100 *J*
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	111 *J*	398 *J*	0.50 *JN*	2,820 *J*	7,290 *J*	2,860 *J*	6,920 *J*
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	57.8 *J*	359 *J*	1.1 *J*	2,670 *J*	7,970 *J*	3,400 *J*	5,250 *R*
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	153 *J*	422 *J*	0.77 *JN*	2,870 *J*	6,700 *J*	2,700 *J*	8,550 *J*
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	238 *J*	522 *J*	0.69 *J*	4,480 *J*	8,150 *J*	3,510 *J*	17,800 *R*
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	195 *J*	489 *J*	1.9 *J*	3,400 *J*	6,710 *J*	2,880 *J*	8,380 *R*
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	122 *J*	407 *J*	1.4 *J*	2,320 *J*	6,860 *J*	2,800 *J*	5,670 *R*
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	137 *J*	1,280 *J*	0.88 *J*	4,480 *J*	7,970 *J*	3,540 *J*	11,800 *R*
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	140 *J*	568 *J*	0.78 *J*	4,840 *J*	6,610 *J*	2,780 *J*	8,940 *R*
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	157 *J*	595 *J*	0.69 *J*	3,460 *J*	5,890 *J*	2,330 *J*	8,530 *R*
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	147 *J*	529 *J*	1.9 *J*	4,440 *J*	6,300 *J*	2,540 *J*	9,450 *R*
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	149 *J*	338 *J*	0.60 *J*	2,840 *J*	6,360 *J*	2,780 *J*	9,400 *R*
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	47.2 *J*	352 *J*	0.93 *J*	2,610 *J*	8,160 *J*	3,350 *J*	6,500 *R*
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	49.2 *J*	352 *J*	0.73 *J*	2,570 *J*	8,190 *J*	3,450 *J*	5,460 *R*
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	52.9 *J*	352 *J*	1.2 *J*	2,130 *J*	7,950 *J*	3,440 *J*	6,870 *R*
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	105 *J*	418 *J*	1.2 *J*	2,840 *J*	6,740 *J*	3,090 *J*	8,540 *J*

Table E-5. Inorganic analyte results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Vanadium (mg/kg dry)	Zinc (mg/kg dry)	Cyanide (mg/kg dry)	Calcium (mg/kg dry)	Magnesium (mg/kg dry)	Potassium (mg/kg dry)	Sodium (mg/kg dry)
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	44.8 *J*	252 *J*	0.70 *J*	6,230 *J*	7,530 *J*	3,290 *J*	5,680 *J*
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	48.0 *J*	259 *J*	0.10 *UJ*	2,690 *J*	8,130 *J*	3,760 *J*	5,640 *J*
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	117 *J*	397 *J*	0.70 *J*	2,670 *J*	7,630 *J*	3,170 *J*	7,610 *J*
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	43.5 *J*	415 *J*	2.9 *J*	2,020 *J*	7,010 *J*	3,160 *J*	7,740 *J*
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	34.1	142	0.20	1,780	6,120	2,650	3,830
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	31.7	73.3	0.20	3,750	6,110	2,890	3,630
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	43.7 *J*	266 *J*	2.0 *J*	2,030 *J*	7,050 *J*	3,090 *J*	5,410 *J*
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	47.5 *J*	226 *J*	0.38 *J*	3,940 *J*	6,880 *J*	3,530 *J*	5,440 *J*
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	46.3	209 *J*	0.42	2,260	7,080 *J*	3,410	3,350
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	33.7	80.7 *J*	0.090 *U*	5,070	6,720 *J*	3,250	2,990
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	47.7	265 *J*	0.11	24,500	6,640 *J*	3,250	4,540
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	85.1 *J*	385 *J*	0.70 *JN*	2,570 *J*	7,900 *J*	3,490 *J*	8,070 *J*
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	38.4	210 *J*	0.40 *JN*	4,470	6,090 *J*	2,560	4,240
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	42.3	205 *J*	0.58 *JN*	1,860	6,510 *J*	2,720	3,790
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	41.6 *J*	423 *J*	0.52 *JN*	2,090 *J*	6,840 *J*	2,960 *J*	5,970 *J*
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	142 *J*	368 *J*	0.13 *UJ*	2,990 *J*	6,190 *J*	2,990 *J*	9,460 *J*
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	89.1 *J*	286 *J*	0.24 *J*	2,360 *J*	5,220 *J*	2,480 *J*	6,830 *J*
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	95.1 *J*	405 *J*	0.13 *UJ*	2,910 *J*	6,370 *J*	2,890 *J*	8,480 *J*
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	81.1 *J*	418 *J*	0.17 *J*	2,370 *J*	5,460 *J*	2,520 *J*	8,320 *J*
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	90.4 *J*	358 *J*	0.51 *JN*	2,390 *J*	5,240 *J*	2,060 *J*	8,720 *J*
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	27.2	59.9 *J*	0.14 *JN*	1,650	3,100 *J*	1,580	3,350
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	30.6	60.7 *J*	0.10 *JN*	1,720	4,010 *J*	1,990	3,400
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	102 *J*	164 *J*	0.49 *JN*	1,790 *J*	3,830 *J*	1,810 *J*	5,940 *J*
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	72.3 *J*	299 *J*	0.45 *JN*	2,430 *J*	5,410 *J*	2,270 *J*	7,530 *J*
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	37.6	69.5 *J*	0.17 *JN*	941	1,530 *J*	716	1,210
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	70.1	168 *J*	0.11 *JN*	5,170	1,890 *J*	574	2,340
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	65.1 *J*	196 *J*	0.34 *JN*	1,870 *J*	3,330 *J*	1,630 *J*	4,250 *J*
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	38.3	146 *J*	0.54	2,550	5,040 *J*	2,560	4,290
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	33.6	76.5 *J*	0.30	2,650	7,210 *J*	3,460	4,550
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	38.4	78.4 *J*	0.40	2,600	7,970 *J*	3,950	4,740
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	47.4	145 *J*	0.080 *U*	1,830	6,890 *J*	3,420	4,870
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	26.1	86.4 *J*	0.080 *U*	2,450	3,880 *J*	1,900	3,640
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	43.0	94.0 *J*	0.28	1,900	6,160 *J*	3,190	4,180
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	38.0	76.1 *J*	0.090 *U*	2,170	6,500 *J*	3,730	4,070
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	54.1	199 *J*	0.55	2,050	7,750 *J*	3,900	6,020
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	261 *J*	409 *J*	0.84 *JN*	3,610 *J*	6,750 *J*	2,780 *J*	10,600 *J*
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	87.0 *J*	300 *J*	0.71 *JN*	2,440 *J*	5,350 *J*	2,440 *J*	7,370 *J*
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	90.2 *J*	330 *J*	2.3 *JN*	2,700 *J*	5,820 *J*	2,700 *J*	7,050 *J*
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	93.9 *J*	192 *J*	0.49 *JN*	1,720 *J*	4,000 *J*	1,750 *J*	6,690 *J*
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	146 *J*	248 *J*	0.67 *JN*	2,670 *J*	5,750 *J*	2,610 *J*	9,150 *J*

Table E-5. Inorganic analyte results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Vanadium (mg/kg dry)	Zinc (mg/kg dry)	Cyanide (mg/kg dry)	Calcium (mg/kg dry)	Magnesium (mg/kg dry)	Potassium (mg/kg dry)	Sodium (mg/kg dry)
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	84.2 *J*	307 *J*	0.47 *JN*	2,590 *J*	5,300 *J*	2,310 *J*	7,580 *J*
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	90.7 *J*	326 *J*	2.0 *JN*	2,710 *J*	5,910 *J*	2,830 *J*	6,740 *J*
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	112 *J*	194 *J*	0.24 *JN*	1,670 *J*	3,930 *J*	1,870 *J*	6,320 *J*
SD01	Ruplnd	10/23/1997	SD01	0	0	0	24.1	0 *R*	0.27	193	85.7	118	29.3 *U*
SD02	Ruplnd	10/24/1997	SD02	0	0	0	10.6	36.2	0.21	209	113	194	31.6
SD03	upland	10/23/1997	SD03	0	0	0	47.0	165	0.53	1,840	244	253	84.4
SD04	upland	10/24/1997	SD04	0	0	0	47.9	132	0.24	1,690	1,090	918	109
SD05	upland	10/23/1997	SD05	0	0	0	32.1	147	0.24	969	229	342	89.7
SD06	upland	10/23/1997	SD06	0	0	0	38.4 *J*	871 *J*	1.4 *J*	0 *R*	603 *J*	743 *J*	475 *J*
SD07	upland	10/23/1997	SD07	0	0	0	48.8 *J*	1,400 *J*	4.3 *J*	0 *R*	1,270 *J*	560 *J*	746 *J*
SD08	upland	10/23/1997	SD08	0	0	0	31.0	104	1.7	1,510	1,140	751	147
SD09	upland	10/28/1997	SD09	0	0	0	49.0 *J*	492 *J*	2.2 *J*	2,950 *J*	702 *J*	733 *J*	255 *J*
SD10	upland	10/28/1997	SD10	0	0	0	42.5 *J*	441 *J*	4.1 *J*	2,950 *J*	959 *J*	701 *J*	200 *J*
SD11	upland	10/28/1997	SD11	0	0	0	75.1 *J*	258 *J*	1.8 *J*	3,060 *J*	1,090 *J*	1,090 *J*	497 *J*
SD12	upland	10/28/1997	SD12	0	0	0	47.1 *J*	132 *J*	2.1 *J*	2,880 *J*	2,520 *J*	1,280 *J*	392 *J*
SD13	upland	10/27/1997	SD13	0	0	0	50.2 *J*	101 *J*	0.56	59,000	569	327	444
SD14	upland	10/27/1997	SD14	0	0	0	22.5 *J*	112 *J*	0.030 *U*	2,610	207	493	162
SD15	upland	10/24/1997	SD15	0	0	0	33.0	71.9	0.060	337	0 *R*	722	265
SD16	upland	10/27/1997	SD16	0	0	0	26.1 *J*	301 *J*	0.48	2,070	1,010	289	237
SD17	upland	10/27/1997	SD17	0	0	0	24.8 *J*	187 *J*	0.40 *J*	2,280 *J*	968 *J*	332 *J*	189 *J*
SD18	upland	10/29/1997	SD18	0	0	0	53.7 *J*	239 *J*	1.1 *J*	13,900 *J*	662 *J*	314 *J*	259 *J*
SD19	upland	10/24/1997	SD19	0	0	0	22.1	41.0	0.020 *U*	906	584	460	79.9
SD20	upland	10/24/1997	SD20	A	0	0	10.7	123	0.020 *U*	356	629	255	73.4
SD20	upland	10/24/1997	SD20	B	0	0	12.7	142	0.17	433	744	361	82.1
SD21	Ruplnd	10/24/1997	SD21	0	0	0	6.9	8.8	0.060	77.8	79.0	112	20.4 *U*
SD22	upland	10/24/1997	SD22	0	0	0	35.0	468	0.77	1,090	1,060	568	182
SD23	upland	10/24/1997	SD23	0	0	0	28.8	44.0	0.44	300	546	435	66.9
SD23	upland	10/24/1997	SD23	0	0	0	28.8	44.0	0.44	300	546	435	66.9
SD24	river	10/27/1997	SD24	0	0	0	78.3 *J*	181 *J*	0.20 *J*	1,490 *J*	3,080 *J*	1,650 *J*	9,840 *J*
SD25	river	10/29/1997	SD25	0	0	0	149 *J*	274 *J*	0.060 *UJ*	2,420 *J*	4,320 *J*	1,970 *J*	11,700 *J*
SD26	marsh	10/29/1997	SD26	0	0	0	71.2 *J*	339 *J*	0.56 *J*	4,910 *J*	6,360 *J*	2,770 *J*	23,300 *J*
SD27	river	10/30/1997	SD27	0	0	0	167 *J*	584 *JN*	0.90 *J*	3,470 *J*	6,480 *J*	2,920 *J*	20,500 *J*
SD28	upland	10/28/1997	SD28	0	0	0	43.1 *J*	120 *J*	0.82 *J*	1,420 *J*	3,460 *J*	1,450 *J*	305 *J*
SD29	upland	10/27/1997	SD29	0	0	0	17.5 *J*	33.9 *J*	0.13	804	460	783	54.9
SD30	upland	10/29/1997	SD30	0	0	0	29.7 *J*	99.9 *J*	0.29	1,570	648	422	155
SD31	river	10/30/1997	SD31	0	0	0	114 *J*	313 *JN*	0.62 *J*	3,170 *J*	6,150 *J*	2,710 *J*	12,400 *J*
SD32	upland	10/28/1997	SD32	0	0	0	53.0 *J*	304 *J*	1.3 *J*	17,100 *J*	750 *J*	362 *J*	407 *J*
SD33	marsh	10/28/1997	SD33	0	0	0	56.3 *J*	215 *J*	1.7 *J*	27,800 *J*	567 *J*	250 *J*	482 *J*
SD34	upland	10/30/1997	SD34	0	0	0	61.0	170 *JN*	1.5	19,300 *J*	679	309	404
SD35	marsh	10/30/1997	SD35	0	0	0	59.3 *J*	185 *JN*	0.44 *J*	3,720 *J*	5,560 *J*	2,200 *J*	3,100 *J*

Table E-5. Inorganic analyte results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Vanadium (mg/kg dry)	Zinc (mg/kg dry)	Cyanide (mg/kg dry)	Calcium (mg/kg dry)	Magnesium (mg/kg dry)	Potassium (mg/kg dry)	Sodium (mg/kg dry)
SD36	marsh	10/30/1997	SD36	0	0	0	57.8	33.7 *JN*	1.1	299	713	751	931
SD37	marsh	10/30/1997	SD37	A	0	0	23.7	15.6 *JN*	0.14	195	412	684	944
SD37	marsh	10/30/1997	SD37	B	0	0	29.7	18.1 *JN*	0.12	185	481	699	904
SD38	river	6/24/1998	SD38	0	0	0	139 *J*	570 *JN*	0.71 *UJ*	4,030 *J*	7,190 *J*	3,140 *J*	9,250 *J*
SD39	river	6/24/1998	SD39	A	0	0	51.1 *J*	337 *JN*	0.50 *J*	2,420 *J*	8,620 *J*	3,840 *J*	8,250 *J*
SD39	river	6/24/1998	SD39	B	0	0	49.0 *J*	304 *JN*	0.58 *UJ*	2,300 *J*	7,490 *J*	3,290 *J*	8,370 *J*
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	53.2 *J*	280 *J*	1.5 *J*	1,640 *J*	3,460 *J*	1,890 *J*	66.7 *UJ*
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	50.2	133 *J*	0.37	2,380	6,460	3,070	53.2 *U*
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	52.0	311 *J*	0.61	2,310	7,210	3,730	203
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	53.2	164 *J*	0.18	2,490	6,300	3,060	55.3 *U*
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	59.2 *J*	159 *J*	1.3 *J*	1,610 *J*	4,190 *J*	2,180 *J*	80.3 *J*
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	57.4	225	0.28	2,080	6,420	3,340	195
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	137	247	0.23	1,530	4,000	1,980	97.3
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	55.4 *J*	230 *J*	0.72 *J*	1,960 *J*	6,400 *J*	3,060 *J*	59.8 *UJ*
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	56.5 *J*	650 *J*	5.4 *J*	3,560 *J*	1,090 *J*	816 *J*	117 *UJ*
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	43.9	235	0.78	1,800	5,730	2,420	216
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	44.6	707	1.9	2,290	6,710	2,590	353
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	35.1	128	0.62	1,550	4,390	1,680	72.4
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	72.4 *J*	303 *J*	0.81 *J*	5,670 *J*	4,800 *J*	2,250 *J*	127 *J*
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	54.3	155	0.55	2,630	6,860	3,030	270
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	50.6	337	1.6	2,600	8,380	3,230	1,350
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	64.1	188	0.68	3,850	6,560	2,890	120
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	57.8	244	1.4	21,700	916	522	277
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	51.5	256	0.70	4,180	6,610	2,750	54.8 *U*
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	49.3	350	2.0	3,440	7,820	2,910	733
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	54.0	107	0.63	6,530	5,550	2,130	83.5
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	69.8 *J*	77.8 *J*	3.8 *J*	5,720 *J*	2,430 *J*	1,270 *J*	481 *J*
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	56.1	231	0.61	3,580	7,240	3,030	486
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	53.1	366	1.7	3,800	8,190	3,300	1,560
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	61.8	88.3	0.91	3,710	6,700	2,980	516
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	39.3	56.3	1.6	2,410	3,040	1,400	132
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	48.3	215	0.55	2,710	5,720	2,550	173
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	36.5	108	0.48	2,420	4,870	2,400	811
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	48.3	87.8	0.090	3,710	5,530	1,960	156
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	110 *J*	596 *J*	0.64 *J*	3,810 *J*	6,850 *J*	3,340 *J*	15,400 *J*
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	58.5 *J*	338 *J*	1.8 *J*	2,840 *J*	9,360 *J*	4,100 *J*	9,340 *J*
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	48.1	165	1.2	2,410	6,760	3,320	5,530
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	86.5 *J*	657 *J*	0.73 *J*	4,320 *J*	14,200 *J*	6,490 *J*	15,200 *J*
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	155 *J*	213 *J*	1.0 *J*	4,430 *J*	4,820 *J*	2,410 *J*	10,100 *J*
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	43.5 *J*	231 *J*	0.11 *J*	5,110 *J*	6,690 *J*	3,420 *J*	6,130 *J*

Table E-5. Inorganic analyte results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Vanadium (mg/kg dry)	Zinc (mg/kg dry)	Cyanide (mg/kg dry)	Calcium (mg/kg dry)	Magnesium (mg/kg dry)	Potassium (mg/kg dry)	Sodium (mg/kg dry)
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	35.0	89.7	0.32	3,330	5,960	3,300	5,440
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	72.2 *J*	204 *J*	0.23 *J*	1,680 *J*	2,810 *J*	1,360 *J*	7,290 *J*
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	35.6 *J*	92.6 *J*	3.4 *J*	1,200 *UJ*	1,790 *J*	1,470 *J*	973 *J*
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	34.1	72.2	0.17	2,520	5,490	2,900	4,140
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	39.7	113	0.33	6,510	5,990	3,060	4,100
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	78.8 *J*	113 *J*	1.0 *J*	1,240 *UJ*	2,270 *J*	1,530 *J*	3,200 *J*
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	27.0	24.9	0.68	642 *U*	440	430	458
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	53.0 *J*	424 *J*	0.65 *J*	2,030 *J*	4,890 *J*	3,170 *J*	5,390 *J*
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	45.3 *J*	294 *J*	1.3 *J*	2,270 *J*	7,190 *J*	2,830 *J*	4,020 *J*
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	85.2	185	1.2	1,150	1,320	711	3,090
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	55.7	228	1.5	29,700	893	391	318
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	53.1	160	0.52	4,180	6,610	2,790	83.3
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	53.9	371	1.4	3,520	8,430	3,310	808
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	65.4	112	0.44	6,320	6,380	2,620	194

Note:
Rriver - river reference zone
Ruplnd - upland reference zone
J - estimated
N - spike sample recovery not within control limits
U - undetected at detection limit shown
R - rejected

Table E-6. Conventional parameter results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Total organic carbon (mg/kg dry)	pH (pH dry)	Percent less than sieve size 2000 (% dry)	Percent less than sieve size 850 (% dry)	Percent less than sieve size 425 (% dry)	Percent retained by sieve size 250 (% dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6	11,800					
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30	13,200					
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42	15,000					
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18	16,600					
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6	4,860					
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30	6,900					
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42	2,500					
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18	17,200					
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6	17,100					
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30	21,800					
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42	20,700					
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18	26,500					
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6	31,900					
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30	29,200					
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42	31,700					
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18	32,800					
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6	19,600					
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30	21,300					
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42	21,000					
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18	23,800					
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6	13,300					
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30	13,300					
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42	11,900					
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18	16,400					
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6	24,200					
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30	15,100					
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42	12,600					
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18	18,900					
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6	33,000					
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30	30,100					
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42	16,800					
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18	18,100					
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6	19,000					
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30	27,000					
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42	30,200					
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18	25,000					
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6	17,500					
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30	17,500					

Table E-6. Conventional parameter results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Total organic carbon (mg/kg dry)	pH (pH dry)	Percent less than sieve size 2000 (% dry)	Percent less than sieve size 850 (% dry)	Percent less than sieve size 425 (% dry)	Percent retained by sieve size 250 (% dry)
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42	18,100					
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18	18,800					
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6	13,500					
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30	8,040					
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42	8,780					
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18	7,950					
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6	10,600					
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30	11,700					
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42	12,600					
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18	11,900					
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6	18,600					
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30	11,200					
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42	12,100					
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18	13,200					
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6	19,700					
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30	12,100					
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42	15,700					
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18	15,600					
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6	15,000					
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30	7,710					
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42	10,600					
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18	13,300					
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6	11,900					
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30	7,710					
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42	11,800					
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18	14,600					
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6	12,600					
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30	6,780					
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42	10,600					
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18	15,200					
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6	12,600					
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30	8,540					
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42	8,270					
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18	10,200					
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6	4,690					
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30	7,390					
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42	8,890					
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18	6,980					

Table E-6. Conventional parameter results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Total organic carbon (mg/kg dry)	pH (pH dry)	Percent less than sieve size 2000 (% dry)	Percent less than sieve size 850 (% dry)	Percent less than sieve size 425 (% dry)	Percent retained by sieve size 250 (% dry)
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6	18,200					
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30	14,100					
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42	14,500					
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18	11,700					
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6	17,400					
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30	17,900					
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42	17,500					
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18	14,500					
SD01	Ruplnd	10/23/1997	SD01	0	0	0	21,104 *J*	4.25 *J*	1.8	5.3	18.6	18.1
SD02	Ruplnd	10/24/1997	SD02	0	0	0	32,260 *J*	5.65 *J*	6.5	14.9	33.0	25.3
SD03	upland	10/23/1997	SD03	0	0	0	25,834 *J*	6.65 *J*	8.5	10.3	11.8	12.2
SD04	upland	10/24/1997	SD04	0	0	0	47,085 *J*	4.75 *J*	1.1	2.3	2.6	2.8
SD05	upland	10/23/1997	SD05	0	0	0	17,833 *J*	6.75 *J*	4.2	7.2	10.1	11.6
SD06	upland	10/23/1997	SD06	0	0	0	40,517 *J*	7.05 *J*	2.1	7.9	7.0	6.2
SD07	upland	10/23/1997	SD07	0	0	0	62,806 *J*	7.45 *J*	2.5	5.6	7.2	8.3
SD08	upland	10/23/1997	SD08	0	0	0	29,086 *J*	6.75 *J*	2.2	2.4	5.9	15.7
SD09	upland	10/28/1997	SD09	0	0	0	26,296 *J*	6.20 *J*	1.3	2.0	1.8	2.2
SD10	upland	10/28/1997	SD10	0	0	0	26,446 *J*	5.75 *J*	1.2	2.4	2.3	2.4
SD11	upland	10/28/1997	SD11	0	0	0	28,044 *J*	5.65 *J*	1.5	2.4	2.5	3.1
SD12	upland	10/28/1997	SD12	0	0	0	22,989 *J*	5.25 *J*	1.7	2.9	3.2	3.3
SD13	upland	10/27/1997	SD13	0	0	0	25,343 *J*	7.35 *J*	6.3	9.6	10.4	7.4
SD14	upland	10/27/1997	SD14	0	0	0	15,766 *J*	6.85 *J*	5.1	5.8	6.9	5.8
SD15	upland	10/24/1997	SD15	0	0	0	24,787 *J*	3.95 *J*	5.2	7.5	6.5	8.4
SD16	upland	10/27/1997	SD16	0	0	0	49,546 *J*	6.25 *J*	14.3	21.9	19.8	8.8
SD17	upland	10/27/1997	SD17	0	0	0	38,799 *J*	6.20 *J*	11.5	24.2	16.1	8.0
SD18	upland	10/29/1997	SD18	0	0	0	35,015 *J*	7.55 *J*	4.3	7.1	5.5	6.1
SD19	upland	10/24/1997	SD19	0	0	0	47,795 *J*	5.40 *J*	1.5	1.8	2.7	21.5
SD20	upland	10/24/1997	SD20	A	0	0	12,659 *J*	5.75 *J*	10.2	38.1	30.5	11.1
SD20	upland	10/24/1997	SD20	B	0	0	25,684 *J*	6.10 *J*	10.2	35.1	33.7	10.7
SD21	Ruplnd	10/24/1997	SD21	0	0	0	20,192 *J*	4.25 *J*	9.5	49.7	23.7	4.4
SD22	upland	10/24/1997	SD22	0	0	0	23,947 *J*	6.60 *J*	6.5	9.9	10.8	13.1
SD23	upland	10/24/1997	SD23	0	0	0	15,181 *J*	4.05 *J*	7.3	6.0	3.9	14.7
SD24	river	10/27/1997	SD24	0	0	0	39,300 *J*	6.45 *J*	7.1	7.1	7.2	10.7
SD25	river	10/29/1997	SD25	0	0	0	57,989 *J*	7.30 *J*	3.5	4.4	5.2	9.7
SD26	marsh	10/29/1997	SD26	0	0	0	30,670 *J*	6.95 *J*	4.7	5.6	4.6	4.2
SD27	river	10/30/1997	SD27	0	0	0	73,191 *J*	6.50 *J*	3.3	3.9	3.9	3.4
SD28	upland	10/28/1997	SD28	0	0	0	30,744 *J*	6.20 *J*	0.9	1.3	1.6	2.7
SD29	upland	10/27/1997	SD29	0	0	0	15,971 *J*	6.40 *J*	0.7	0.6	0.8	1.1

Table E-6. Conventional parameter results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Total organic carbon (mg/kg dry)	pH (pH dry)	Percent less than sieve size 2000 (% dry)	Percent less than sieve size 850 (% dry)	Percent less than sieve size 425 (% dry)	Percent retained by sieve size 250 (% dry)
SD29	upland	10/27/1997	SD29	0	0	0	15,971 *J*	6.40 *J*	0.7	0.6	0.8	1.1
SD30	upland	10/29/1997	SD30	0	0	0	20,801 *J*	6.75 *J*	3.7	5.7	7.3	10.9
SD31	river	10/30/1997	SD31	0	0	0	34,018 *J*	7.30 *J*	0.9	1.6	1.6	2.1
SD32	upland	10/28/1997	SD32	0	0	0	47,457 *J*	7.65 *J*	0.2	1.6	2.2	2.5
SD33	marsh	10/28/1997	SD33	0	0	0	31,264 *J*	7.45 *J*	1.5	2.1	2.4	2.7
SD34	upland	10/30/1997	SD34	0	0	0	28,806 *J*	7.60 *J*	2.7	4.1	5.0	4.8
SD35	marsh	10/30/1997	SD35	0	0	0	30,062 *J*	6.85 *J*	1.7	2.8	2.4	2.3
SD36	marsh	10/30/1997	SD36	0	0	0	24,145 *J*	3.60 *J*	7.7	9.9	11.5	19.1
SD36	marsh	10/30/1997	SD36	0	0	0	24,145 *J*	3.60 *J*	7.7	9.9	11.5	19.1
SD37	marsh	10/30/1997	SD37	A	0	0	10,768 *J*	2.90 *J*	7.7	14.8	17.0	19.2
SD37	marsh	10/30/1997	SD37	B	0	0	24,907 *J*	2.80 *J*	7.9	14.1	15.6	18.4
SD38	river	6/24/1998	SD38	0	0	0	53,700 *J*	7.90 *J*				
SD39	river	6/24/1998	SD39	A	0	0	31,600 *J*	7.20 *J*				
SD39	river	6/24/1998	SD39	B	0	0	33,400 *J*	8.10 *J*				
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6	37,400					
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30	16,000					
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42	18,700					
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18	19,300					
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6	32,500					
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30	15,400					
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42	11,400					
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18	20,000					
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6	47,800					
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30	20,000					
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42	21,900					
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18	15,100					
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6	35,100					
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30	15,000					
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42	16,800					
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18	18,500					
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6	32,000					
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30	21,400					
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42	20,600					
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18	21,900					
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6	44,700					
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30	18,800					
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42	18,700					
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18	17,100					

Table E-6. Conventional parameter results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Total organic carbon (mg/kg dry)	pH (pH dry)	Percent less than sieve size 2000 (% dry)	Percent less than sieve size 850 (% dry)	Percent less than sieve size 425 (% dry)	Percent retained by sieve size 250 (% dry)
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6	35,700					
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30	21,400					
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42	11,200					
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18	15,800					
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6	23,100					
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30	13,200					
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42	13,300					
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18	15,900					
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6	37,100					
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30	14,300					
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42	11,500					
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18	2,300					
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6	26,800					
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30	13,900					
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42	11,800					
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18	34,200					
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6	9,130					
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30	13,900					
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42	16,100					
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18	25,400					
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6	29,200					
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30	22,100					
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42	20,100					
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18	24,300					

Note: Rriver - river reference zone
RupInd - upland reference zone
J - estimated

Table E-6. Conventional parameter results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Percent retained by sieve size 150 (% dry)	Percent retained by sieve size 75 (% dry)	Percent retained by sieve size 26.65–38.55 (% dry)	Percent retained by sieve size 17.94–24.47 (% dry)	Percent retained by sieve size 10.95–14.13 (% dry)	Percent retained by sieve size 8.06–10.02 (% dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6						
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30						
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42						
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18						
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6						
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30						
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42						
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18						
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6						
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30						
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42						
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18						
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6						
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30						
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42						
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18						
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6						
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30						
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42						
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18						
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6						
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30						
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42						
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18						
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6						
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30						
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42						
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18						
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6						
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30						
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42						
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18						
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6						
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30						
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42						
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18						
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6						
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30						

Table E-6. Conventional parameter results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Percent retained by sieve size 150 (% dry)	Percent retained by sieve size 75 (% dry)	Percent retained by sieve size 26.65–38.55 (% dry)	Percent retained by sieve size 17.94–24.47 (% dry)	Percent retained by sieve size 10.95–14.13 (% dry)	Percent retained by sieve size 8.06–10.02 (% dry)
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42						
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18						
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6						
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30						
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42						
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18						
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6						
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30						
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42						
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18						
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6						
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30						
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42						
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18						
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6						
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30						
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42						
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18						
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6						
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30						
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42						
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18						
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6						
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30						
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42						
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18						
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6						
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30						
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42						
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18						
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6						
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30						
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42						
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18						
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6						
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30						
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42						
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18						

Table E-6. Conventional parameter results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Percent retained by sieve size 150 (% dry)	Percent retained by sieve size 75 (% dry)	Percent retained by sieve size 26.65–38.55 (% dry)	Percent retained by sieve size 17.94–24.47 (% dry)	Percent retained by sieve size 10.95–14.13 (% dry)	Percent retained by sieve size 8.06–10.02 (% dry)
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6						
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30						
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42						
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18						
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6						
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30						
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42						
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18						
SD01	Ruplnd	10/23/1997	SD01	0	0	0	7.4	15.2	2.0	1.0	2.0	1.0
SD02	Ruplnd	10/24/1997	SD02	0	0	0	0.6	12.5	0.9	0.8	0	0.4
SD03	upland	10/23/1997	SD03	0	0	0	10.9	18.9	1.0	1.0	2.0	1.0
SD04	upland	10/24/1997	SD04	0	0	0	0.4	-3.8	4.3	6.5	6.6	6.5
SD05	upland	10/23/1997	SD05	0	0	0	15.7	20.8	1.0	2.1	1.0	1.1
SD06	upland	10/23/1997	SD06	0	0	0	9.0	4.9	9.5	4.8	7.1	4.7
SD07	upland	10/23/1997	SD07	0	0	0	9.9	16.2	4.2	6.9	4.1	4.1
SD08	upland	10/23/1997	SD08	0	0	0	15.5	21.2	1.2	1.1	2.3	2.3
SD09	upland	10/28/1997	SD09	0	0	0	2.3	12.2	7.7	3.9	3.8	2.0
SD10	upland	10/28/1997	SD10	0	0	0	3.4	10.7	4.8	2.4	2.4	7.1
SD11	upland	10/28/1997	SD11	0	0	0	3.1	10.4	2.2	2.1	4.4	6.5
SD12	upland	10/28/1997	SD12	0	0	0	3.6	21.2	3.4	1.7	3.4	6.9
SD13	upland	10/27/1997	SD13	0	0	0	5.8	13.1	2.6	5.2	15.6	2.6
SD14	upland	10/27/1997	SD14	0	0	0	5.2	9.7	1.6	4.8	3.2	4.8
SD15	upland	10/24/1997	SD15	0	0	0	10.6	20.9	3.8	2.5	2.5	1.3
SD16	upland	10/27/1997	SD16	0	0	0	5.0	17.4	0.6	1.2	1.2	1.2
SD17	upland	10/27/1997	SD17	0	0	0	5.3	16.0	2.8	1.5	0.7	0.7
SD18	upland	10/29/1997	SD18	0	0	0	1.6	17.1	1.5	5.9	8.8	7.4
SD19	upland	10/24/1997	SD19	0	0	0	18.8	24.0	2.0	1.0	1.0	1.0
SD20	upland	10/24/1997	SD20	A	0	0	4.1	5.1	0.1	0	0.1	0
SD20	upland	10/24/1997	SD20	B	0	0	4.0	5.4	0.1	0	0	0.1
SD21	Ruplnd	10/24/1997	SD21	0	0	0	2.3	8.0	0.1	0.1	0.3	0.1
SD22	upland	10/24/1997	SD22	0	0	0	16.5	20.2	2.7	1.8	0.9	0.9
SD23	upland	10/24/1997	SD23	0	0	0	27.8	20.3	0.8	0.9	0.8	1.7
SD24	river	10/27/1997	SD24	0	0	0	12.3	16.7	2.6	1.3	2.7	2.6
SD25	river	10/29/1997	SD25	0	0	0	9.0	23.6	1.3	2.8	2.7	4.2
SD26	marsh	10/29/1997	SD26	0	0	0	3.4	26.8	2.2	4.5	2.3	4.5
SD27	river	10/30/1997	SD27	0	0	0	4.5	42.0	1.8	3.6	0	1.8
SD28	upland	10/28/1997	SD28	0	0	0	3.7	11.8	3.9	2.0	5.9	7.9
SD29	upland	10/27/1997	SD29	0	0	0	8.2	21.9	3.4	5.2	5.2	3.5

Table E-6. Conventional parameter results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Percent retained by sieve size 150 (% dry)	Percent retained by sieve size 75 (% dry)	Percent retained by sieve size 26.65–38.55 (% dry)	Percent retained by sieve size 17.94–24.47 (% dry)	Percent retained by sieve size 10.95–14.13 (% dry)	Percent retained by sieve size 8.06–10.02 (% dry)
SD29	upland	10/27/1997	SD29	0	0	0	8.2	21.9	3.4	5.2	5.2	3.5
SD30	upland	10/29/1997	SD30	0	0	0	6.8	18.3	1.4	2.8	4.3	2.8
SD31	river	10/30/1997	SD31	0	0	0	1.5	17.8	4.6	4.6	4.6	4.6
SD32	upland	10/28/1997	SD32	0	0	0	3.3	17.0	4.4	2.2	4.3	8.8
SD33	marsh	10/28/1997	SD33	0	0	0	3.3	16.7	3.7	1.8	5.6	7.4
SD34	upland	10/30/1997	SD34	0	0	0	4.7	16.6	5.5	2.8	5.5	5.5
SD35	marsh	10/30/1997	SD35	0	0	0	2.2	25.2	2.0	6.1	2.0	8.0
SD36	marsh	10/30/1997	SD36	0	0	0	9.9	15.7	0.9	2.7	1.8	1.7
SD36	marsh	10/30/1997	SD36	0	0	0	9.9	15.7	0.9	2.7	1.8	1.7
SD37	marsh	10/30/1997	SD37	A	0	0	8.1	20.7	1.4	0.7	0	0
SD37	marsh	10/30/1997	SD37	B	0	0	21.1	15.3	0.5	0.4	0.4	0
SD38	river	6/24/1998	SD38	0	0	0						
SD39	river	6/24/1998	SD39	A	0	0						
SD39	river	6/24/1998	SD39	B	0	0						
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6						
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30						
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42						
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18						
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6						
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30						
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42						
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18						
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6						
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30						
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42						
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18						
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6						
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30						
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42						
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18						
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6						
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30						
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42						
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18						
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6						
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30						
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42						
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18						

Table E-6. Conventional parameter results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Percent retained by sieve size 150 (% dry)	Percent retained by sieve size 75 (% dry)	Percent retained by sieve size 26.65–38.55 (% dry)	Percent retained by sieve size 17.94–24.47 (% dry)	Percent retained by sieve size 10.95–14.13 (% dry)	Percent retained by sieve size 8.06–10.02 (% dry)
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6						
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30						
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42						
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18						
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6						
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30						
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42						
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18						
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6						
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30						
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42						
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18						
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6						
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30						
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42						
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18						
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6						
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30						
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42						
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18						
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6						
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30						
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42						
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18						

Note: Rriver - river reference zone
RupInd - upland reference zone
J - estimated

Table E-6. Conventional parameter results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Percent retained by sieve size 5.89–7.13 (% dry)	Percent retained by sieve size 3–3.57 (% dry)	Percent retained by sieve size 1.25–1.47 (% dry)
RSD01	Rriver	12/10/1999	RSD01(0-6)	0	0	6			
RSD01	Rriver	12/10/1999	RSD01(18-30)	0	18	30			
RSD01	Rriver	12/10/1999	RSD01(30-42)	0	30	42			
RSD01	Rriver	12/10/1999	RSD01(6-18)	0	6	18			
RSD02	Rriver	10/8/1999	RSD02(0-6)	0	0	6			
RSD02	Rriver	10/8/1999	RSD02(18-30)	0	18	30			
RSD02	Rriver	10/8/1999	RSD02(30-42)	0	30	42			
RSD02	Rriver	10/8/1999	RSD02(6-18)	0	6	18			
RSD03	river	12/23/1999	RSD03(0-6)	0	0	6			
RSD03	river	12/23/1999	RSD03(18-30)	0	18	30			
RSD03	river	12/9/1999	RSD03(30-42)	0	30	42			
RSD03	river	12/23/1999	RSD03(6-18)	0	6	18			
RSD04	river	10/8/1999	RSD04(0-6)	0	0	6			
RSD04	river	10/8/1999	RSD04(18-30)	0	18	30			
RSD04	river	10/8/1999	RSD04(30-42)	0	30	42			
RSD04	river	10/8/1999	RSD04(6-18)	0	6	18			
RSD05	river	12/23/1999	RSD05(0-6)	0	0	6			
RSD05	river	12/23/1999	RSD05(18-30)	0	18	30			
RSD05	river	12/23/1999	RSD05(30-42)	0	30	42			
RSD05	river	12/23/1999	RSD05(6-18)	0	6	18			
RSD06	river	12/23/1999	RSD06(0-6)	0	0	6			
RSD06	river	12/23/1999	RSD06(18-30)	0	18	30			
RSD06	river	12/23/1999	RSD06(30-42)	0	30	42			
RSD06	river	12/23/1999	RSD06(6-18)	0	6	18			
RSD07	river	10/8/1999	RSD07(0-6)	0	0	6			
RSD07	river	11/8/1999	RSD07(18-30)	0	18	30			
RSD07	river	10/8/1999	RSD07(30-42)	0	30	42			
RSD07	river	10/8/1999	RSD07(6-18)	0	6	18			
RSD08	river	10/9/1999	RSD08(0-6)	0	0	6			
RSD08	river	10/9/1999	RSD08(18-30)	0	18	30			
RSD08	river	10/9/1999	RSD08(30-42)	0	30	42			
RSD08	river	10/8/1999	RSD08(6-18)	0	6	18			
RSD09	river	10/8/1999	RSD09(0-6)	0	0	6			
RSD09	river	10/8/1999	RSD09(18-30)	0	18	30			
RSD09	river	10/8/1999	RSD09(30-42)	0	30	42			
RSD09	river	10/8/1999	RSD09(6-18)	0	6	18			
RSD10	river	10/8/1999	RSD10(0-6)	0	0	6			
RSD10	river	10/8/1999	RSD10(18-30)	0	18	30			

Table E-6. Conventional parameter results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Percent retained by sieve size 5.89–7.13 (% dry)	Percent retained by sieve size 3–3.57 (% dry)	Percent retained by sieve size 1.25–1.47 (% dry)
RSD10	river	10/8/1999	RSD10(30-42)	0	30	42			
RSD10	river	10/8/1999	RSD10(6-18)	0	6	18			
RSD11	river	11/8/1999	RSD11(0-6)	0	0	6			
RSD11	river	11/8/1999	RSD11(18-30)	0	18	30			
RSD11	river	11/8/1999	RSD11(30-42)	0	30	42			
RSD11	river	11/8/1999	RSD11(6-18)	0	6	18			
RSD12	river	12/23/1999	RSD12(0-6)	0	0	6			
RSD12	river	12/23/1999	RSD12(18-30)	0	18	30			
RSD12	river	12/23/1999	RSD12(30-42)	0	30	42			
RSD12	river	12/23/1999	RSD12(6-18)	0	6	18			
RSD13	river	11/8/1999	RSD13(0-6)	0	0	6			
RSD13	river	11/8/1999	RSD13(18-30)	0	18	30			
RSD13	river	11/8/1999	RSD13(30-42)	0	30	42			
RSD13	river	11/8/1999	RSD13(6-18)	0	6	18			
RSD14	river	10/7/1999	RSD14(0-6)	0	0	6			
RSD14	river	10/7/1999	RSD14(18-30)	0	18	30			
RSD14	river	10/7/1999	RSD14(30-42)	0	30	42			
RSD14	river	10/7/1999	RSD14(6-18)	0	6	18			
RSD15	river	11/8/1999	RSD15(0-6)	0	0	6			
RSD15	river	11/9/1999	RSD15(18-30)	0	18	30			
RSD15	river	10/7/1999	RSD15(30-42)	0	30	42			
RSD15	river	10/7/1999	RSD15(6-18)	0	6	18			
RSD16	river	10/7/1999	RSD16(0-6)	0	0	6			
RSD16	river	10/7/1999	RSD16(18-30)	0	18	30			
RSD16	river	10/7/1999	RSD16(30-42)	0	30	42			
RSD16	river	10/7/1999	RSD16(6-18)	0	6	18			
RSD17	river	10/8/1999	RSD17(0-6)	0	0	6			
RSD17	river	10/7/1999	RSD17(18-30)	0	18	30			
RSD17	river	10/7/1999	RSD17(30-42)	0	30	42			
RSD17	river	10/7/1999	RSD17(6-18)	0	6	18			
RSD18	Rriver	11/9/1999	RSD18(0-6)	0	0	6			
RSD18	Rriver	10/7/1999	RSD18(18-30)	0	18	30			
RSD18	Rriver	10/7/1999	RSD18(30-42)	0	30	42			
RSD18	Rriver	10/7/1999	RSD18(6-18)	0	6	18			
RSD19	Rriver	10/8/1999	RSD19(0-6)	0	0	6			
RSD19	Rriver	11/9/1999	RSD19(18-30)	0	18	30			
RSD19	Rriver	11/9/1999	RSD19(30-42)	0	30	42			
RSD19	Rriver	11/9/1999	RSD19(6-18)	0	6	18			

Table E-6. Conventional parameter results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Percent retained by sieve size 5.89–7.13 (% dry)	Percent retained by sieve size 3–3.57 (% dry)	Percent retained by sieve size 1.25–1.47 (% dry)
RSD20	river	10/7/1999	RSD20(0-6)	0	0	6			
RSD20	river	10/7/1999	RSD20(18-30)	0	18	30			
RSD20	river	10/7/1999	RSD20(30-42)	0	30	42			
RSD20	river	10/7/1999	RSD20(6-18)	0	6	18			
RSD23	river	10/8/1999	RSD23(0-6)	0	0	6			
RSD23	river	10/7/1999	RSD23(18-30)	0	18	30			
RSD23	river	10/7/1999	RSD23(30-42)	0	30	42			
RSD23	river	10/7/1999	RSD23(6-18)	0	6	18			
SD01	Ruplnd	10/23/1997	SD01	0	0	0	4.0	1.1	22.5
SD02	Ruplnd	10/24/1997	SD02	0	0	0	0	0.4	4.7
SD03	upland	10/23/1997	SD03	0	0	0	2.0	2.0	18.4
SD04	upland	10/24/1997	SD04	0	0	0	8.7	6.5	55.5
SD05	upland	10/23/1997	SD05	0	0	0	1.0	2.1	22.1
SD06	upland	10/23/1997	SD06	0	0	0	4.8	2.3	29.7
SD07	upland	10/23/1997	SD07	0	0	0	6.9	4.1	20.0
SD08	upland	10/23/1997	SD08	0	0	0	2.3	2.2	25.7
SD09	upland	10/28/1997	SD09	0	0	0	15.4	7.7	37.7
SD10	upland	10/28/1997	SD10	0	0	0	7.2	7.1	46.6
SD11	upland	10/28/1997	SD11	0	0	0	8.6	4.4	48.8
SD12	upland	10/28/1997	SD12	0	0	0	3.4	8.5	36.8
SD13	upland	10/27/1997	SD13	0	0	0	2.6	2.6	16.2
SD14	upland	10/27/1997	SD14	0	0	0	6.4	4.8	35.9
SD15	upland	10/24/1997	SD15	0	0	0	2.5	3.8	24.5
SD16	upland	10/27/1997	SD16	0	0	0	1.1	0.6	6.9
SD17	upland	10/27/1997	SD17	0	0	0	1.4	0.7	11.1
SD18	upland	10/29/1997	SD18	0	0	0	4.4	1.5	28.8
SD19	upland	10/24/1997	SD19	0	0	0	3.0	2.1	19.6
SD20	upland	10/24/1997	SD20	A	0	0	0	0.1	0.6
SD20	upland	10/24/1997	SD20	B	0	0	0	0	0.7
SD21	Ruplnd	10/24/1997	SD21	0	0	0	0.1	0.2	1.5
SD22	upland	10/24/1997	SD22	0	0	0	2.7	1.8	12.2
SD23	upland	10/24/1997	SD23	0	0	0	0.9	1.7	13.2
SD24	river	10/27/1997	SD24	0	0	0	4.0	2.6	23.1
SD25	river	10/29/1997	SD25	0	0	0	4.1	2.7	26.8
SD26	marsh	10/29/1997	SD26	0	0	0	4.5	4.5	28.2
SD27	river	10/30/1997	SD27	0	0	0	3.7	3.6	24.5
SD28	upland	10/28/1997	SD28	0	0	0	9.9	4.0	44.4
SD29	upland	10/27/1997	SD29	0	0	0	5.2	5.2	39.0

Table E-6. Conventional parameter results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Percent retained by sieve size 5.89–7.13 (% dry)	Percent retained by sieve size 3–3.57 (% dry)	Percent retained by sieve size 1.25–1.47 (% dry)
SD29	upland	10/27/1997	SD29	0	0	0	5.2	5.2	39.0
SD30	upland	10/29/1997	SD30	0	0	0	5.7	2.8	27.5
SD31	river	10/30/1997	SD31	0	0	0	6.8	4.6	44.7
SD32	upland	10/28/1997	SD32	0	0	0	2.2	4.3	47.0
SD33	marsh	10/28/1997	SD33	0	0	0	3.7	9.3	39.8
SD34	upland	10/30/1997	SD34	0	0	0	5.6	2.7	34.5
SD35	marsh	10/30/1997	SD35	0	0	0	4.1	2.0	39.2
SD36	marsh	10/30/1997	SD36	0	0	0	2.7	1.8	14.6
SD36	marsh	10/30/1997	SD36	0	0	0	2.7	1.8	14.6
SD37	marsh	10/30/1997	SD37	A	0	0	0.8	0	9.6
SD37	marsh	10/30/1997	SD37	B	0	0	0.5	0	5.8
SD38	river	6/24/1998	SD38	0	0	0			
SD39	river	6/24/1998	SD39	A	0	0			
SD39	river	6/24/1998	SD39	B	0	0			
SDM01	upland	12/15/1999	SDM01(0-6)	0	0	6			
SDM01	upland	12/15/1999	SDM01(18-30)	0	18	30			
SDM01	upland	12/15/1999	SDM01(30-42)	0	30	42			
SDM01	upland	12/15/1999	SDM01(6-18)	0	6	18			
SDM02	upland	12/15/1999	SDM02(0-6)	0	0	6			
SDM02	upland	12/15/1999	SDM02(18-30)	0	18	30			
SDM02	upland	12/15/1999	SDM02(30-42)	0	30	42			
SDM02	upland	12/15/1999	SDM02(6-18)	0	6	18			
SDM03	upland	12/15/1999	SDM03(0-6)	0	0	6			
SDM03	upland	12/15/1999	SDM03(18-30)	0	18	30			
SDM03	upland	12/15/1999	SDM03(30-42)	0	30	42			
SDM03	upland	12/15/1999	SDM03(6-18)	0	6	18			
SDM04	marsh	12/16/1999	SDM04(0-6)	0	0	6			
SDM04	marsh	12/15/1999	SDM04(18-30)	0	18	30			
SDM04	marsh	12/15/1999	SDM04(30-42)	0	30	42			
SDM04	marsh	12/16/1999	SDM04(6-18)	0	6	18			
SDM05	marsh	12/15/1999	SDM05(0-6)	0	0	6			
SDM05	marsh	12/15/1999	SDM05(18-30)	0	18	30			
SDM05	marsh	12/15/1999	SDM05(30-42)	0	30	42			
SDM05	marsh	12/15/1999	SDM05(6-18)	0	6	18			
SDM06	marsh	12/15/1999	SDM06(0-6)	0	0	6			
SDM06	marsh	12/15/1999	SDM06(18-30)	0	18	30			
SDM06	marsh	12/15/1999	SDM06(30-42)	0	30	42			
SDM06	marsh	12/15/1999	SDM06(6-18)	0	6	18			

Table E-6. Conventional parameter results for sediment samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Percent retained by sieve size 5.89–7.13 (% dry)	Percent retained by sieve size 3–3.57 (% dry)	Percent retained by sieve size 1.25–1.47 (% dry)
SDM07	marsh	12/8/1999	SDM07(0-6)	0	0	6			
SDM07	marsh	12/8/1999	SDM07(18-30)	0	18	30			
SDM07	marsh	12/8/1999	SDM07(30-42)	0	30	42			
SDM07	marsh	12/8/1999	SDM07(6-18)	0	6	18			
SDM08	marsh	12/8/1999	SDM08(0-6)	0	0	6			
SDM08	marsh	12/8/1999	SDM08(18-30)	0	18	30			
SDM08	marsh	12/8/1999	SDM08(30-42)	0	30	42			
SDM08	marsh	12/8/1999	SDM08(6-18)	0	6	18			
SDM09	marsh	12/8/1999	SDM09(0-6)	0	0	6			
SDM09	marsh	12/8/1999	SDM09(18-30)	0	18	30			
SDM09	marsh	12/8/1999	SDM09(30-42)	0	30	42			
SDM09	marsh	12/8/1999	SDM09(6-18)	0	6	18			
SDM10	marsh	12/8/1999	SDM10(0-6)	0	0	6			
SDM10	marsh	12/8/1999	SDM10(18-30)	0	18	30			
SDM10	marsh	12/8/1999	SDM10(30-42)	0	30	42			
SDM10	marsh	12/8/1999	SDM10(6-18)	0	6	18			
SDM11	marsh	12/8/1999	SDM11(0-6)	0	0	6			
SDM11	marsh	12/8/1999	SDM11(18-30)	0	18	30			
SDM11	marsh	12/8/1999	SDM11(30-42)	0	30	42			
SDM11	marsh	12/8/1999	SDM11(6-18)	0	6	18			
SDM12	marsh	12/16/1999	SDM12(0-6)	0	0	6			
SDM12	marsh	12/16/1999	SDM12(18-30)	0	18	30			
SDM12	marsh	12/16/1999	SDM12(30-42)	0	30	42			
SDM12	marsh	12/16/1999	SDM12(6-18)	0	6	18			

Note: Rriver - river reference zone
RuplInd - upland reference zone
J - estimated

Table E-7. Volatile organic compound results for soil samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	1,1,1-Trichloroethane (µg/kg dry)	1,1,2,2-Tetrachloro-ethane (µg/kg dry)	1,1,2-Trichloroethane (µg/kg dry)	1,1-Dichloroethane (µg/kg dry)	1,1-Dichloroethene (µg/kg dry)	1,2,4-Trichloro-benzene (µg/kg dry)
SB22A	marsh	12/9/1997	SB22A(0-1)	A	0	12	12 *U*	12 *U*	12 *U*	12 *U*	12 *U*	1,900
SB22A	marsh	12/9/1997	SB22A(0-1)	B	0	12	13 *U*	13 *U*	13 *U*	13 *U*	13 *U*	950
SB22B	marsh	12/9/1997	SB22B(6-8)	0	72	96	16 *U*	16 *U*	16 *U*	16 *U*	16 *U*	16,000
SB22C	marsh	12/9/1997	SB22C(12-14)	0	144	168	14 *U*	14 *U*	14 *U*	14 *U*	14 *U*	440 *U*
SB22D	marsh	12/8/1997	SB22D(28-30)	0	336	360	13 *U*	13 *U*	13 *U*	13 *U*	13 *U*	54 *J*

Note: *J* - estimated
U - undetected at detection limit shown

Table E-7. Volatile organic compound results for soil samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	1,2-Dichloro-benzene (µg/kg dry)	1,2-Dichloroethane (µg/kg dry)	1,2-Dichloro-propane (µg/kg dry)	1,3-Dichloro-benzene (µg/kg dry)	1,4-Dichloro-benzene (µg/kg dry)	2-Butanone (µg/kg dry)
SB22A	marsh	12/9/1997	SB22A(0-1)	A	0	12	410 *U*	12 *U*	12 *U*	410 *U*	410 *U*	12 *U*
SB22A	marsh	12/9/1997	SB22A(0-1)	B	0	12	440 *U*	13 *U*	13 *U*	440 *U*	440 *U*	13 *U*
SB22B	marsh	12/9/1997	SB22B(6-8)	0	72	96	520 *U*	16 *U*	16 *U*	4,500 *J*	1,000	25
SB22C	marsh	12/9/1997	SB22C(12-14)	0	144	168	440 *U*	14 *U*	14 *U*	440 *U*	440 *U*	14 *U*
SB22D	marsh	12/8/1997	SB22D(28-30)	0	336	360	430 *U*	13 *U*	13 *U*	430 *U*	430 *U*	13 *U*

Note: *J* - estimated
U - undetected at detection limit shown

Table E-7. Volatile organic compound results for soil samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	2-Hexanone (µg/kg dry)	4-Methyl-2-pentanone (µg/kg dry)	Acetone (µg/kg dry)	Benzene (µg/kg dry)	Bromodichloro-methane (µg/kg dry)	Bromomethane (µg/kg dry)
SB22A	marsh	12/9/1997	SB22A(0-1)	A	0	12	12 *UJ*	12 *U*	12 *U*	12 *U*	12 *U*	12 *U*
SB22A	marsh	12/9/1997	SB22A(0-1)	B	0	12	13 *UJ*	13 *U*	13 *U*	13 *U*	13 *U*	13 *U*
SB22B	marsh	12/9/1997	SB22B(6-8)	0	72	96	16 *UJ*	16 *U*	76	16 *U*	16 *U*	16 *U*
SB22C	marsh	12/9/1997	SB22C(12-14)	0	144	168	14 *UJ*	14 *U*	18	14 *U*	14 *U*	14 *U*
SB22D	marsh	12/8/1997	SB22D(28-30)	0	336	360	13 *UJ*	13 *U*	12 *J*	13 *U*	13 *U*	13 *U*

Note: *J* - estimated
U - undetected at detection limit shown

Table E-7. Volatile organic compound results for soil samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Carbon disulfide (µg/kg dry)	Carbon tetrachloride (µg/kg dry)	Chlorobenzene (µg/kg dry)	Chloroethane (µg/kg dry)	Chloroform (µg/kg dry)	Chloromethane (µg/kg dry)
SB22A	marsh	12/9/1997	SB22A(0-1)	A	0	12	12 *UJ*	12 *U*	12 *U*	12 *U*	12 *U*	12 *UJ*
SB22A	marsh	12/9/1997	SB22A(0-1)	B	0	12	13 *UJ*	13 *U*	13 *U*	13 *U*	13 *U*	13 *UJ*
SB22B	marsh	12/9/1997	SB22B(6-8)	0	72	96	16 *UJ*	16 *U*	17	16 *U*	16 *U*	16 *UJ*
SB22C	marsh	12/9/1997	SB22C(12-14)	0	144	168	14 *UJ*	14 *U*	14 *U*	14 *U*	14 *U*	14 *UJ*
SB22D	marsh	12/8/1997	SB22D(28-30)	0	336	360	13 *UJ*	13 *U*	13 *U*	13 *U*	13 *U*	13 *UJ*

Note: *J* - estimated
U - undetected at detection limit shown

Table E-7. Volatile organic compound results for soil samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	cis-1,3-Dichloro-propene (µg/kg dry)	Methylene chloride (µg/kg dry)	Ethylbenzene (µg/kg dry)	Styrene (µg/kg dry)	Tetrachloro-ethene (µg/kg dry)	Toluene (µg/kg dry)
SB22A	marsh	12/9/1997	SB22A(0-1)	A	0	12	12 *U*	12 *U*	12 *U*	12 *U*	12 *U*	12 *U*
SB22A	marsh	12/9/1997	SB22A(0-1)	B	0	12	13 *U*	13 *U*	13 *U*	13 *U*	13 *U*	13 *U*
SB22B	marsh	12/9/1997	SB22B(6-8)	0	72	96	16 *U*	16 *U*	16 *U*	16 *U*	16 *U*	16 *U*
SB22C	marsh	12/9/1997	SB22C(12-14)	0	144	168	14 *U*	14 *U*	14 *U*	14 *U*	14 *U*	14 *U*
SB22D	marsh	12/8/1997	SB22D(28-30)	0	336	360	13 *U*	13 *U*	13 *U*	13 *U*	13 *U*	13 *U*

Note: *J* - estimated
U - undetected at detection limit shown

Table E-7. Volatile organic compound results for soil samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	trans-1,3-Dichloro-propene (µg/kg dry)	Bromoform (µg/kg dry)	Trichloroethene (µg/kg dry)	Vinyl chloride (µg/kg dry)	Xylene isomers (total) (µg/kg dry)
SB22A	marsh	12/9/1997	SB22A(0-1)	A	0	12	12 *U*	12 *U*	2.0 *J*	12 *UJ*	12 *U*
SB22A	marsh	12/9/1997	SB22A(0-1)	B	0	12	13 *U*	13 *U*	8.0 *J*	13 *UJ*	13 *U*
SB22B	marsh	12/9/1997	SB22B(6-8)	0	72	96	16 *U*	16 *U*	16 *U*	16 *UJ*	16 *U*
SB22C	marsh	12/9/1997	SB22C(12-14)	0	144	168	14 *U*	14 *U*	14 *U*	14 *UJ*	14 *U*
SB22D	marsh	12/8/1997	SB22D(28-30)	0	336	360	13 *U*	13 *U*	13 *U*	13 *UJ*	13 *U*

Note: *J* - estimated
U - undetected at detection limit shown

Table E-8. Semivolatile organic compound results for soil samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	2,4,5-Trichlorophenol (µg/kg dry)	2,4,6-Trichlorophenol (µg/kg dry)	2,4-Dichlorophenol (µg/kg dry)	2,4-Dimethylphenol (µg/kg dry)	2,4-Dinitrophenol (µg/kg dry)	2,4-Dinitrotoluene (µg/kg dry)
SB22A	marsh	12/9/1997	SB22A(0-1)	A	0	12	1,000 *U*	410 *U*	410 *U*	410 *U*	1,000 *U*	410 *U*
SB22A	marsh	12/9/1997	SB22A(0-1)	B	0	12	1,100 *U*	440 *U*	440 *U*	440 *U*	1,100 *UJ*	440 *U*
SB22B	marsh	12/9/1997	SB22B(6-8)	0	72	96	1,300 *U*	520 *U*	520 *U*	520 *U*	1,300 *UJ*	520 *U*
SB22C	marsh	12/9/1997	SB22C(12-14)	0	144	168	1,100 *U*	440 *U*	440 *U*	440 *U*	1,100 *UJ*	440 *U*
SB22D	marsh	12/8/1997	SB22D(28-30)	0	336	360	1,100 *U*	430 *U*	430 *U*	430 *U*	1,100 *UJ*	430 *U*

Note: PAH - polycyclic aromatic hydrocarbon
J - estimated
U - undetected at detection limit shown

Table E-8. Semivolatile organic compound results for soil samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	2,6-Dinitrotoluene (µg/kg dry)	2-Chloro-naphthalene (µg/kg dry)	2-Chlorophenol (µg/kg dry)	2-Methyl-4,6-dinitrophenol (µg/kg dry)	2-Methyl-naphthalene (µg/kg dry)	2-Methylphenol (µg/kg dry)
SB22A	marsh	12/9/1997	SB22A(0-1)	A	0	12	410 *U*	410 *U*	410 *U*	1,000 *U*	410 *U*	410 *U*
SB22A	marsh	12/9/1997	SB22A(0-1)	B	0	12	440 *U*	440 *U*	440 *U*	1,100 *U*	440 *U*	440 *U*
SB22B	marsh	12/9/1997	SB22B(6-8)	0	72	96	520 *U*	520 *U*	520 *U*	1,300 *U*	520 *U*	520 *U*
SB22C	marsh	12/9/1997	SB22C(12-14)	0	144	168	440 *U*	440 *U*	440 *U*	1,100 *U*	440 *U*	440 *U*
SB22D	marsh	12/8/1997	SB22D(28-30)	0	336	360	430 *U*	430 *U*	430 *U*	1,100 *U*	430 *U*	430 *U*

Note: PAH - polycyclic aromatic hydrocarbon
J - estimated
U - undetected at detection limit shown

Table E-8. Semivolatile organic compound results for soil samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	2-Nitroaniline (µg/kg dry)	2-Nitrophenol (µg/kg dry)	3,3'-Dichloro-benzidine (µg/kg dry)	3-Nitroaniline (µg/kg dry)	4-Bromophenyl-phenyl ether (µg/kg dry)	4-Chloro-3-methylphenol (µg/kg dry)
SB22A	marsh	12/9/1997	SB22A(0-1)	A	0	12	1,000 *UJ*	410 *U*	410 *UJ*	1,000 *UJ*	410 *U*	410 *U*
SB22A	marsh	12/9/1997	SB22A(0-1)	B	0	12	1,100 *U*	440 *U*	440 *U*	1,100 *U*	440 *U*	440 *U*
SB22B	marsh	12/9/1997	SB22B(6-8)	0	72	96	1,300 *U*	520 *U*	520 *U*	1,300 *U*	520 *U*	520 *U*
SB22C	marsh	12/9/1997	SB22C(12-14)	0	144	168	1,100 *U*	440 *U*	440 *U*	1,100 *U*	440 *U*	440 *U*
SB22D	marsh	12/8/1997	SB22D(28-30)	0	336	360	1,100 *U*	430 *U*	430 *U*	1,100 *U*	430 *U*	430 *U*

Note: PAH - polycyclic aromatic hydrocarbon
J - estimated
U - undetected at detection limit shown

Table E-8. Semivolatile organic compound results for soil samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	4-Chloroaniline (µg/kg dry)	4-Chlorophenyl-phenyl ether (µg/kg dry)	4-Methylphenol (µg/kg dry)	4-Nitroaniline (µg/kg dry)	4-Nitrophenol (µg/kg dry)	Acenaphthene (µg/kg dry)
SB22A	marsh	12/9/1997	SB22A(0-1)	A	0	12	410 *U*	410 *U*	410 *U*	1,000 *U*	1,000 *UJ*	410 *U*
SB22A	marsh	12/9/1997	SB22A(0-1)	B	0	12	440 *U*	440 *U*	440 *U*	1,100 *U*	1,100 *U*	440 *U*
SB22B	marsh	12/9/1997	SB22B(6-8)	0	72	96	520 *U*	520 *U*	520 *U*	1,300 *U*	1,300 *U*	520 *U*
SB22C	marsh	12/9/1997	SB22C(12-14)	0	144	168	440 *U*	440 *U*	440 *U*	1,100 *U*	1,100 *U*	440 *U*
SB22D	marsh	12/8/1997	SB22D(28-30)	0	336	360	430 *U*	430 *U*	430 *U*	1,100 *U*	1,100 *U*	430 *U*

Note: PAH - polycyclic aromatic hydrocarbon
J - estimated
U - undetected at detection limit shown

Table E-8. Semivolatile organic compound results for soil samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Acenaph-thylene (µg/kg dry)	Anthracene (µg/kg dry)	Benz[a]-anthracene (µg/kg dry)	Benzo[a]pyrene (µg/kg dry)	Benzo[b]-fluoranthene (µg/kg dry)	Benzo[ghi]-perylene (µg/kg dry)
SB22A	marsh	12/9/1997	SB22A(0-1)	A	0	12	410 *U*	410 *U*	410 *U*	410 *U*	76 *J*	410 *U*
SB22A	marsh	12/9/1997	SB22A(0-1)	B	0	12	440 *U*	440 *U*	230 *J*	140 *J*	430 *J*	440 *U*
SB22B	marsh	12/9/1997	SB22B(6-8)	0	72	96	520 *U*	520 *U*	520 *U*	520 *U*	520 *U*	520 *U*
SB22C	marsh	12/9/1997	SB22C(12-14)	0	144	168	440 *U*	440 *U*	440 *U*	440 *U*	440 *U*	440 *U*
SB22D	marsh	12/8/1997	SB22D(28-30)	0	336	360	430 *U*	430 *U*	430 *U*	430 *U*	430 *U*	430 *U*

Note: PAH - polycyclic aromatic hydrocarbon
J - estimated
U - undetected at detection limit shown

Table E-8. Semivolatile organic compound results for soil samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Benzo[k]-fluoranthene (µg/kg dry)	bis[2-chloroethoxy]-methane (µg/kg dry)	bis[2-chloroethyl]-ether (µg/kg dry)	Bis[2-chloroisopropyl]-ether (µg/kg dry)	bis[2-Ethylhexyl]-phthalate (µg/kg dry)	Butylbenzyl phthalate (µg/kg dry)
SB22A	marsh	12/9/1997	SB22A(0-1)	A	0	12	410 *U*	410 *U*	410 *U*	410 *U*	620	410 *U*
SB22A	marsh	12/9/1997	SB22A(0-1)	B	0	12	440 *U*	440 *U*	440 *U*	440 *U*	650	440 *U*
SB22B	marsh	12/9/1997	SB22B(6-8)	0	72	96	520 *U*	520 *U*	520 *U*	520 *U*	150 *J*	520 *U*
SB22C	marsh	12/9/1997	SB22C(12-14)	0	144	168	440 *U*	440 *U*	440 *U*	440 *U*	440 *U*	440 *U*
SB22D	marsh	12/8/1997	SB22D(28-30)	0	336	360	430 *U*	430 *U*	430 *U*	430 *U*	880	430 *U*

Note: PAH - polycyclic aromatic hydrocarbon
J - estimated
U - undetected at detection limit shown

Table E-8. Semivolatile organic compound results for soil samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Carbazole (µg/kg dry)	Chrysene (µg/kg dry)	Dibenz[a,h]-anthracene (µg/kg dry)	Dibenzofuran (µg/kg dry)	Diethyl phthalate (µg/kg dry)	Dimethyl phthalate (µg/kg dry)
SB22A	marsh	12/9/1997	SB22A(0-1)	A	0	12	410 *UJ*	410 *U*	410 *U*	410 *U*	410 *U*	410 *U*
SB22A	marsh	12/9/1997	SB22A(0-1)	B	0	12	440 *U*	370 *J*	440 *U*	440 *U*	440 *U*	440 *U*
SB22B	marsh	12/9/1997	SB22B(6-8)	0	72	96	520 *U*	520 *U*	520 *U*	520 *U*	520 *U*	520 *U*
SB22C	marsh	12/9/1997	SB22C(12-14)	0	144	168	440 *U*	440 *U*	440 *U*	440 *U*	440 *U*	440 *U*
SB22D	marsh	12/8/1997	SB22D(28-30)	0	336	360	430 *U*	430 *U*	430 *U*	430 *U*	430 *U*	430 *U*

Note: PAH - polycyclic aromatic hydrocarbon
J - estimated
U - undetected at detection limit shown

Table E-8. Semivolatile organic compound results for soil samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Di-n-butyl phthalate (µg/kg dry)	Di-n-octyl phthalate (µg/kg dry)	Fluoranthene (µg/kg dry)	Fluorene (µg/kg dry)	Hexachloro-benzene (µg/kg dry)	Hexachloro-butadiene (µg/kg dry)
SB22A	marsh	12/9/1997	SB22A(0-1)	A	0	12	410 *U*	410 *U*	55 *J*	410 *U*	410 *U*	410 *UJ*
SB22A	marsh	12/9/1997	SB22A(0-1)	B	0	12	440 *U*	440 *U*	160 *J*	440 *U*	440 *U*	440 *U*
SB22B	marsh	12/9/1997	SB22B(6-8)	0	72	96	520 *U*	520 *U*	56 *J*	520 *U*	520 *U*	520 *U*
SB22C	marsh	12/9/1997	SB22C(12-14)	0	144	168	440 *U*	440 *U*	440 *U*	440 *U*	440 *U*	440 *U*
SB22D	marsh	12/8/1997	SB22D(28-30)	0	336	360	430 *U*	430 *U*	430 *U*	430 *U*	430 *U*	430 *U*

Note: PAH - polycyclic aromatic hydrocarbon
J - estimated
U - undetected at detection limit shown

Table E-8. Semivolatile organic compound results for soil samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Hexachloro-cyclopentadiene (µg/kg dry)	Hexachloro-ethane (µg/kg dry)	Indeno[1,2,3-cd]pyrene (µg/kg dry)	Isophorone (µg/kg dry)	Naphthalene (µg/kg dry)	Nitrobenzene (µg/kg dry)
SB22A	marsh	12/9/1997	SB22A(0-1)	A	0	12	410 *UJ*	410 *U*	410 *U*	410 *U*	410 *U*	410 *U*
SB22A	marsh	12/9/1997	SB22A(0-1)	B	0	12	440 *U*	440 *U*	440 *U*	440 *U*	440 *U*	440 *U*
SB22B	marsh	12/9/1997	SB22B(6-8)	0	72	96	520 *U*	520 *U*	520 *U*	520 *U*	520 *U*	520 *U*
SB22C	marsh	12/9/1997	SB22C(12-14)	0	144	168	440 *U*	440 *U*	440 *U*	440 *U*	440 *U*	440 *U*
SB22D	marsh	12/8/1997	SB22D(28-30)	0	336	360	430 *U*	430 *U*	430 *U*	430 *U*	430 *U*	430 *U*

Note: PAH - polycyclic aromatic hydrocarbon
J - estimated
U - undetected at detection limit shown

Table E-8. Semivolatile organic compound results for soil samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	N-nitroso-di-n-propylamine (µg/kg dry)	N-nitroso-diphenylamine (µg/kg dry)	Pentachloro-phenol (µg/kg dry)	Phenanthrene (µg/kg dry)	Phenol (µg/kg dry)	Pyrene (µg/kg dry)	Total PAHs (µg/kg dry)
SB22A	marsh	12/9/1997	SB22A(0-1)	A	0	12	410 *U*	410 *U*	1,000 *U*	410 *U*	49 *J*	120 *J*	2,900 *J*
SB22A	marsh	12/9/1997	SB22A(0-1)	B	0	12	440 *U*	440 *U*	1,100 *U*	440 *U*	70 *J*	140 *J*	3,700 *J*
SB22B	marsh	12/9/1997	SB22B(6-8)	0	72	96	520 *U*	520 *U*	1,300 *U*	520 *U*	520 *U*	70 *J*	3,800 *J*
SB22C	marsh	12/9/1997	SB22C(12-14)	0	144	168	440 *U*	440 *U*	1,100 *U*	440 *U*	170 *J*	440 *U*	7,000 *U*
SB22D	marsh	12/8/1997	SB22D(28-30)	0	336	360	430 *U*	430 *U*	1,100 *U*	430 *U*	430 *U*	430 *U*	6,900 *U*

Note: PAH - polycyclic aromatic hydrocarbon
J - estimated
U - undetected at detection limit shown

Table E-9. Pesticide/PCB results for soil samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	4,4'-DDD (µg/kg dry)	4,4'-DDE (µg/kg dry)	4,4'-DDT (µg/kg dry)	Aldrin (µg/kg dry)	alpha-Chlordane (µg/kg dry)	alpha-Endosulfan (µg/kg dry)
SB22A	marsh	12/9/1997	SB22A(0-1)	A	0	12	4.1 *U*	4.1 *U*	4.1 *U*	2.1 *U*	0 *R*	2.1 *U*
SB22A	marsh	12/9/1997	SB22A(0-1)	B	0	12	4.4 *U*	4.4 *U*	4.4 *U*	2.2 *U*	2.2 *U*	2.2 *U*
SB22B	marsh	12/9/1997	SB22B(6-8)	0	72	96	0 *R*	0 *R*	0 *R*	0 *R*	0 *R*	0 *R*
SB22C	marsh	12/9/1997	SB22C(12-14)	0	144	168	4.4 *U*	4.4 *U*	4.4 *U*	2.3 *U*	2.3 *U*	2.3 *U*
SB22D	marsh	12/8/1997	SB22D(28-30)	0	336	360	4.2 *U*	4.2 *U*	4.2 *U*	2.2 *U*	2.2 *U*	2.2 *U*

Note: *J* - estimated
N - tentatively identified
U - undetected at detection limit shown
R - rejected

Table E-9. Pesticide/PCB results for soil samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	alpha-Hexachloro-cyclohexane (µg/kg dry)	beta-Endosulfan (µg/kg dry)	beta-Hexachloro cyclohexane (µg/kg dry)	delta-Hexachloro-cyclohexane (µg/kg dry)	Dieldrin (µg/kg dry)	Endosulfan sulfate (µg/kg dry)
SB22A	marsh	12/9/1997	SB22A(0-1)	A	0	12	2.1 *U*	4.1 *U*	2.1 *U*	2.1 *U*	4.1 *U*	4.1 *U*
SB22A	marsh	12/9/1997	SB22A(0-1)	B	0	12	2.2 *U*	4.4 *U*	2.2 *U*	2.2 *U*	4.4 *U*	4.4 *U*
SB22B	marsh	12/9/1997	SB22B(6-8)	0	72	96	0 *R*	0 *R*	0 *R*	0 *R*	0 *R*	0 *R*
SB22C	marsh	12/9/1997	SB22C(12-14)	0	144	168	2.3 *U*	4.4 *U*	2.3 *U*	2.3 *U*	2.3 *U*	4.4 *U*
SB22D	marsh	12/8/1997	SB22D(28-30)	0	336	360	2.2 *U*	4.2 *U*	2.2 *U*	2.2 *U*	4.2 *U*	4.2 *U*

Note:
J - estimated
N - tentatively identified
U - undetected at detection limit shown
R - rejected

Table E-9. Pesticide/PCB results for soil samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Endrin (µg/kg dry)	Endrin aldehyde (µg/kg dry)	Endrin ketone (µg/kg dry)	gamma-Chlordane (µg/kg dry)	gamma-Hexachloro-cyclohexane (µg/kg dry)	Heptachlor (µg/kg dry)
SB22A	marsh	12/9/1997	SB22A(0-1)	A	0	12	4.1 *U*	4.1 *U*	4.1 *U*	2.1 *U*	2.1 *U*	2.1 *U*
SB22A	marsh	12/9/1997	SB22A(0-1)	B	0	12	4.4 *U*	4.4 *U*	0.19 *JN*	2.2 *U*	2.2 *U*	2.2 *U*
SB22B	marsh	12/9/1997	SB22B(6-8)	0	72	96	0 *R*	0 *R*	0 *R*	0 *R*	0 *R*	0 *R*
SB22C	marsh	12/9/1997	SB22C(12-14)	0	144	168	4.4 *U*	4.4 *U*	4.4 *U*	2.3 *U*	2.3 *U*	2.3 *U*
SB22D	marsh	12/8/1997	SB22D(28-30)	0	336	360	4.2 *U*	0.17 *J*	4.2 *U*	2.2 *U*	2.2 *U*	2.2 *U*

Note: *J* - estimated
N - tentatively identified
U - undetected at detection limit shown
R - rejected

Table E-9. Pesticide/PCB results for soil samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Heptachlor epoxide (µg/kg dry)	Methoxychlor (µg/kg dry)	Toxaphene (µg/kg dry)	Aroclor® 1016 (µg/kg dry)	Aroclor® 1221 (µg/kg dry)	Aroclor® 1232 (µg/kg dry)
SB22A	marsh	12/9/1997	SB22A(0-1)	A	0	12	2.1 *U*	0 *R*	210 *U*	41 *U*	84 *U*	41 *U*
SB22A	marsh	12/9/1997	SB22A(0-1)	B	0	12	2.2 *U*	22 *U*	220 *U*	44 *U*	89 *U*	44 *U*
SB22B	marsh	12/9/1997	SB22B(6-8)	0	72	96	0 *R*	0 *R*	0 *R*	0 *R*	0 *R*	0 *R*
SB22C	marsh	12/9/1997	SB22C(12-14)	0	144	168	2.3 *U*	23 *U*	230 *U*	44 *U*	90 *U*	44 *U*
SB22D	marsh	12/8/1997	SB22D(28-30)	0	336	360	2.2 *U*	22 *U*	220 *U*	42 *U*	86 *U*	42 *U*

Note:
J - estimated
N - tentatively identified
U - undetected at detection limit shown
R - rejected

Table E-9. Pesticide/PCB results for soil samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Aroclor® 1242 (µg/kg dry)	Aroclor® 1248 (µg/kg dry)	Aroclor® 1254 (µg/kg dry)	Aroclor® 1260 (µg/kg dry)	Polychlorinated biphenyls (µg/kg dry)
SB22A	marsh	12/9/1997	SB22A(0-1)	A	0	12	41 *U*	41 *U*	180 *J*	41 *U*	180 *J*
SB22A	marsh	12/9/1997	SB22A(0-1)	B	0	12	44 *U*	44 *U*	120 *J*	44 *U*	120 *J*
SB22B	marsh	12/9/1997	SB22B(6-8)	0	72	96	0 *R*	0 *R*	0 *R*	0 *R*	0 *R*
SB22C	marsh	12/9/1997	SB22C(12-14)	0	144	168	44 *U*	44 *U*	44 *U*	8.1 *J*	8.1 *J*
SB22D	marsh	12/8/1997	SB22D(28-30)	0	336	360	42 *U*	42 *U*	42 *U*	42 *U*	86 *U*

Note:
J - estimated
N - tentatively identified
U - undetected at detection limit shown
R - rejected

Table E-10. Inorganic analyte results for soil samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Aluminum (mg/kg dry)	Antimony (mg/kg dry)	Arsenic (mg/kg dry)	Barium (mg/kg dry)	Beryllium (mg/kg dry)	Cadmium (mg/kg dry)
SB22A	marsh	12/9/1997	SB22A(0-1)	A	0	12	2,230	4.2 *JN*	28.0 *J*	21.2	0.25 *U*	1.5
SB22A	marsh	12/9/1997	SB22A(0-1)	B	0	12	3,710	2.5 *JN*	32.8 *J*	20.4	0.25 *U*	1.2
SB22B	marsh	12/9/1997	SB22B(6-8)	0	72	96	11,800	0.93 *UJN*	13.2 *J*	48.4	0.68	1.3
SB22C	marsh	12/9/1997	SB22C(12-14)	0	144	168	8,540	0.78 *UJN*	13.3	40.3	1.1	1.4
SB22D	marsh	12/8/1997	SB22D(28-30)	0	336	360	11,100	0.78 *UJN*	2.3	58.7	0.72	2.1

Note:
J - estimated
N - spike sample recovery not within control limits
U - undetected at detection limit shown
R - rejected

Table E-10. Inorganic analyte results for soil samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Chromium (mg/kg dry)	Cobalt (mg/kg dry)	Copper (mg/kg dry)	Iron (mg/kg dry)	Lead (mg/kg dry)	Manganese (mg/kg dry)
SB22A	marsh	12/9/1997	SB22A(0-1)	A	0	12	140	1.2	176 *J*	25,400	130 *JN*	34.1 *JN*
SB22A	marsh	12/9/1997	SB22A(0-1)	B	0	12	104	1.6	158 *J*	21,100	82.3 *JN*	45.5 *JN*
SB22B	marsh	12/9/1997	SB22B(6-8)	0	72	96	45.3	6.8	146 *J*	24,400	49.1 *JN*	183 *JN*
SB22C	marsh	12/9/1997	SB22C(12-14)	0	144	168	26.4	30.9	24.4	26,400	0 *R*	0 *R*
SB22D	marsh	12/8/1997	SB22D(28-30)	0	336	360	21.5	14.0	17.8	38,500	0 *R*	0 *R*

Note: *J* - estimated
N - spike sample recovery not within control limits
U - undetected at detection limit shown
R - rejected

Table E-10. Inorganic analyte results for soil samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Mercury (mg/kg dry)	Nickel (mg/kg dry)	Selenium (mg/kg dry)	Silver (mg/kg dry)	Thallium (mg/kg dry)	Vanadium (mg/kg dry)
SB22A	marsh	12/9/1997	SB22A(0-1)	A	0	12	2.9	5.9	0.75 *UJN*	42.8	0.75 *UJN*	19.8
SB22A	marsh	12/9/1997	SB22A(0-1)	B	0	12	3.4	6.6	0.74 *UJN*	17.8	0.74 *UJN*	19.7
SB22B	marsh	12/9/1997	SB22B(6-8)	0	72	96	0.86	20.4	0.93 *UJN*	2.1	0.93 *UJN*	29.1
SB22C	marsh	12/9/1997	SB22C(12-14)	0	144	168	0.060 *U*	24.6	0.78 *U*	0.26 *U*	0.78 *U*	49.0
SB22D	marsh	12/8/1997	SB22D(28-30)	0	336	360	0.060 *U*	20.7	0.78 *U*	0.26 *U*	0.78 *U*	25.9

Note: *J* - estimated
N - spike sample recovery not within control limits
U - undetected at detection limit shown
R - rejected

Table E-10. Inorganic analyte results for soil samples

Station	Zone	Date	Sample ID	Field Replicate	Upper Depth (in.)	Lower Depth (in.)	Zinc (mg/kg dry)	Cyanide (mg/kg dry)	Calcium (mg/kg dry)	Magnesium (mg/kg dry)	Potassium (mg/kg dry)	Sodium (mg/kg dry)
SB22A	marsh	12/9/1997	SB22A(0-1)	A	0	12	23.8	0.14	152	472	960	493
SB22A	marsh	12/9/1997	SB22A(0-1)	B	0	12	22.9	0.060 *U*	189	887	610	559
SB22B	marsh	12/9/1997	SB22B(6-8)	0	72	96	63.5	0.85	891	3,200	1,700	1,260
SB22C	marsh	12/9/1997	SB22C(12-14)	0	144	168	56.6	0.060 *U*	584	1,870	1,230	566
SB22D	marsh	12/8/1997	SB22D(28-30)	0	336	360	61.0	0.15	898	2,820	1,820	287

Note: *J* - estimated
N - spike sample recovery not within control limits
U - undetected at detection limit shown
R - rejected

Table E-11. Volatile organic compound results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	1,1,1-Trichloroethane (µg/L unfiltered)	1,1,2,2-Tetrachloro-ethane (µg/L unfiltered)	1,1,2-Trichloroethane (µg/L unfiltered)	1,1-Dichloroethane (µg/L unfiltered)	1,1-Dichloroethene (µg/L unfiltered)	1,2,4-Trichloro-benzene (µg/L unfiltered)	1,2-Dibromo-3-chloropropane (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	2.0
RSW02	Rriver	RSW02	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW03	river	RSW03	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW04	river	RSW04	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW05	river	RSW05	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW06	river	RSW06	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW07	river	RSW07	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW08	river	RSW08	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW09	river	RSW09	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW10	river	RSW10	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW11	river	RSW11	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW12	river	RSW12	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW13	river	RSW13	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW14	river	RSW14	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW15	river	RSW15	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW16	river	RSW16	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW17	river	RSW17	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW18	Rriver	RSW18	10/5/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW19	Rriver	RSW19	10/5/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW20	river	RSW20	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW23	river	RSW23	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW24	river	RSW24	12/10/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
SW24	river	SW24-RR	10/30/1997	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	
SW25	river	SW25-RR	10/29/1997	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	
SW26	marsh	SW26-DSM	10/29/1997	A	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	
SW26	marsh	SW31-DSM	10/29/1997	B	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	
SW27	river	SW27-RR	10/30/1997	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-11. Volatile organic compound results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	1,2-Dibromoethane (µg/L unfiltered)	1,2-Dichloro-benzene (µg/L unfiltered)	1,2-Dichloroethane (µg/L unfiltered)	1,2-Dichloro-propane (µg/L unfiltered)	1,3-Dichloro-benzene (µg/L unfiltered)	1,4-Dichloro-benzene (µg/L unfiltered)	2-Butanone (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW02	Rriver	RSW02	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW03	river	RSW03	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW04	river	RSW04	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW05	river	RSW05	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW06	river	RSW06	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW07	river	RSW07	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW08	river	RSW08	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW09	river	RSW09	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW10	river	RSW10	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW11	river	RSW11	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW12	river	RSW12	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW13	river	RSW13	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW14	river	RSW14	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW15	river	RSW15	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW16	river	RSW16	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW17	river	RSW17	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	2.0	3.0	10 *U*
RSW18	Rriver	RSW18	10/5/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW19	Rriver	RSW19	10/5/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW20	river	RSW20	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW23	river	RSW23	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW24	river	RSW24	12/10/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
SW24	river	SW24-RR	10/30/1997	0		10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
SW25	river	SW25-RR	10/29/1997	0		10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
SW26	marsh	SW26-DSM	10/29/1997	A		10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
SW26	marsh	SW31-DSM	10/29/1997	B		10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
SW27	river	SW27-RR	10/30/1997	0		10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-11. Volatile organic compound results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	2-Hexanone (µg/L unfiltered)	4-Methyl-2-pentanone (µg/L unfiltered)	Acetone (µg/L unfiltered)	Benzene (µg/L unfiltered)	Bromodichloro-methane (µg/L unfiltered)	Bromomethane (µg/L unfiltered)	Carbon disulfide (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0	10 *U*	10 *U*	22 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW02	Rriver	RSW02	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW03	river	RSW03	12/16/1999	0	10 *U*	10 *U*	18 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW04	river	RSW04	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW05	river	RSW05	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW06	river	RSW06	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW07	river	RSW07	10/8/1999	0	10 *U*	10 *U*	24 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW08	river	RSW08	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW09	river	RSW09	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW10	river	RSW10	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW11	river	RSW11	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW12	river	RSW12	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW13	river	RSW13	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW14	river	RSW14	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW15	river	RSW15	10/6/1999	0	10 *U*	10 *U*	15 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW16	river	RSW16	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW17	river	RSW17	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW18	Rriver	RSW18	10/5/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW19	Rriver	RSW19	10/5/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW20	river	RSW20	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW23	river	RSW23	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW24	river	RSW24	12/10/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
SW24	river	SW24-RR	10/30/1997	0	10 *U*	10 *U*	8.0 *J*	10 *U*	10 *U*	10 *U*	10 *U*
SW25	river	SW25-RR	10/29/1997	0	10 *U*	10 *U*	16 *UJ*	10 *U*	10 *U*	10 *U*	10 *U*
SW26	marsh	SW26-DSM	10/29/1997	A	10 *U*	10 *U*	11 *UJ*	10 *U*	10 *U*	10 *U*	10 *U*
SW26	marsh	SW31-DSM	10/29/1997	B	10 *U*	10 *U*	10 *UJ*	10 *U*	10 *U*	10 *U*	10 *U*
SW27	river	SW27-RR	10/30/1997	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-11. Volatile organic compound results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	Carbon tetrachloride (µg/L unfiltered)	Trichlorofluoro-methane (µg/L unfiltered)	1,1,2-Trichloro-1,2,2-Trifluoroethane (µg/L unfiltered)	Chlorobenzene (µg/L unfiltered)	Chloroethane (µg/L unfiltered)	Chloroform (µg/L unfiltered)	Chloromethane (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW02	Rriver	RSW02	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW03	river	RSW03	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW04	river	RSW04	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW05	river	RSW05	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW06	river	RSW06	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW07	river	RSW07	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW08	river	RSW08	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW09	river	RSW09	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW10	river	RSW10	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW11	river	RSW11	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW12	river	RSW12	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW13	river	RSW13	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW14	river	RSW14	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW15	river	RSW15	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW16	river	RSW16	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW17	river	RSW17	10/6/1999	0	10 *U*	10 *U*	10 *U*	2.0	10 *U*	10 *U*	10 *U*
RSW18	Rriver	RSW18	10/5/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW19	Rriver	RSW19	10/5/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW20	river	RSW20	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW23	river	RSW23	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW24	river	RSW24	12/10/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
SW24	river	SW24-RR	10/30/1997	0	10 *U*			10 *U*	10 *U*	10 *U*	10 *UJ*
SW25	river	SW25-RR	10/29/1997	0	10 *U*			10 *U*	10 *U*	10 *U*	10 *U*
SW26	marsh	SW26-DSM	10/29/1997	A	10 *U*			10 *U*	10 *U*	10 *U*	10 *U*
SW26	marsh	SW31-DSM	10/29/1997	B	10 *U*			10 *U*	10 *U*	10 *U*	10 *U*
SW27	river	SW27-RR	10/30/1997	0	10 *U*			10 *U*	10 *U*	10 *U*	10 *UJ*

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-11. Volatile organic compound results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	cis-1,2-Dichloroethene (µg/L unfiltered)	cis-1,3-Dichloro-propene (µg/L unfiltered)	Cyclohexane (µg/L unfiltered)	Dichloro-difluoromethane (µg/L unfiltered)	Methylene chloride (µg/L unfiltered)	Ethylbenzene (µg/L unfiltered)	Isopropyl-benzene (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW02	Rriver	RSW02	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW03	river	RSW03	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW04	river	RSW04	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW05	river	RSW05	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW06	river	RSW06	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW07	river	RSW07	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW08	river	RSW08	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW09	river	RSW09	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW10	river	RSW10	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW11	river	RSW11	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW12	river	RSW12	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW13	river	RSW13	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW14	river	RSW14	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW15	river	RSW15	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW16	river	RSW16	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW17	river	RSW17	10/6/1999	0	10	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW18	Rriver	RSW18	10/5/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW19	Rriver	RSW19	10/5/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	14 *U*	10 *U*	10 *U*
RSW20	river	RSW20	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW23	river	RSW23	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW24	river	RSW24	12/10/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
SW24	river	SW24-RR	10/30/1997	0		10 *U*			10 *U*	10 *U*	
SW25	river	SW25-RR	10/29/1997	0		10 *U*			10 *U*	10 *U*	
SW26	marsh	SW26-DSM	10/29/1997	A		10 *U*			10 *U*	10 *U*	
SW26	marsh	SW31-DSM	10/29/1997	B		10 *U*			10 *U*	10 *U*	
SW27	river	SW27-RR	10/30/1997	0		10 *U*			10 *U*	10 *U*	

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-11. Volatile organic compound results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	Methyl Acetate (µg/L unfiltered)	Methyl-tert-butyl ether (µg/L unfiltered)	Methylcyclo-hexane (µg/L unfiltered)	Styrene (µg/L unfiltered)	Tetrachloro-ethene (µg/L unfiltered)	Toluene (µg/L unfiltered)	trans-1,2-Dichloroethene (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0	4.0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW02	Rriver	RSW02	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW03	river	RSW03	12/16/1999	0	10 *U*	4.0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW04	river	RSW04	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW05	river	RSW05	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW06	river	RSW06	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW07	river	RSW07	10/8/1999	0	2.0	2.0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW08	river	RSW08	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW09	river	RSW09	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW10	river	RSW10	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW11	river	RSW11	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW12	river	RSW12	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW13	river	RSW13	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW14	river	RSW14	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW15	river	RSW15	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW16	river	RSW16	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW17	river	RSW17	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW18	Rriver	RSW18	10/5/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW19	Rriver	RSW19	10/5/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW20	river	RSW20	10/7/1999	0	10 *U*	2.0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW23	river	RSW23	10/7/1999	0	10 *U*	2.0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW24	river	RSW24	12/10/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
SW24	river	SW24-RR	10/30/1997	0				10 *U*	10 *U*	10 *U*	
SW25	river	SW25-RR	10/29/1997	0				10 *U*	10 *U*	10 *U*	
SW26	marsh	SW26-DSM	10/29/1997	A				10 *U*	10 *U*	10 *U*	
SW26	marsh	SW31-DSM	10/29/1997	B				10 *U*	10 *U*	10 *U*	
SW27	river	SW27-RR	10/30/1997	0				10 *U*	10 *U*	10 *U*	

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-11. Volatile organic compound results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	trans-1,3-Dichloro-propene (µg/L unfiltered)	Bromoform (µg/L unfiltered)	Trichloroethene (µg/L unfiltered)	Vinyl chloride (µg/L unfiltered)	Xylene isomers (total) (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW02	Rriver	RSW02	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW03	river	RSW03	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW04	river	RSW04	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW05	river	RSW05	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW06	river	RSW06	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW07	river	RSW07	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW08	river	RSW08	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW09	river	RSW09	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW10	river	RSW10	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW11	river	RSW11	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW12	river	RSW12	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW13	river	RSW13	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW14	river	RSW14	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW15	river	RSW15	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW16	river	RSW16	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW17	river	RSW17	10/6/1999	0	10 *U*	10 *U*	10 *U*	1.0	10 *U*
RSW18	Rriver	RSW18	10/5/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW19	Rriver	RSW19	10/5/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW20	river	RSW20	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW23	river	RSW23	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW24	river	RSW24	12/10/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
SW24	river	SW24-RR	10/30/1997	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
SW25	river	SW25-RR	10/29/1997	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
SW26	marsh	SW26-DSM	10/29/1997	A	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
SW26	marsh	SW31-DSM	10/29/1997	B	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
SW27	river	SW27-RR	10/30/1997	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-12. Semivolatile organic compound results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	2,4,5-Trichlorophenol (µg/L unfiltered)	2,4,6-Trichlorophenol (µg/L unfiltered)	2,4-Dichlorophenol (µg/L unfiltered)	2,4-Dimethylphenol (µg/L unfiltered)	2,4-Dinitrophenol (µg/L unfiltered)	2,4-Dinitrotoluene (µg/L unfiltered)	2,6-Dinitrotoluene (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0	25 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*
RSW02	Rriver	RSW02	10/8/1999	0	27 *U*	11 *U*	11 *U*	11 *U*	27 *U*	11 *U*	11 *U*
RSW03	river	RSW03	12/16/1999	0	25 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*
RSW04	river	RSW04	10/8/1999	0	25 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*
RSW05	river	RSW05	12/16/1999	0	25 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*
RSW06	river	RSW06	12/16/1999	0	25 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*
RSW07	river	RSW07	10/8/1999	0	25 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*
RSW08	river	RSW08	10/8/1999	0	25 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*
RSW09	river	RSW09	10/7/1999	0	26 *U*	10 *U*	10 *U*	10 *U*	26 *U*	10 *U*	10 *U*
RSW10	river	RSW10	10/7/1999	0	25 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*
RSW11	river	RSW11	10/6/1999	0	26 *U*	10 *U*	10 *U*	10 *U*	26 *U*	10 *U*	10 *U*
RSW12	river	RSW12	10/8/1999	0	24 *U*	10 *U*	10 *U*	10 *U*	24 *U*	10 *U*	10 *U*
RSW13	river	RSW13	10/6/1999	0	25 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*
RSW14	river	RSW14	10/7/1999	0	25 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*
RSW15	river	RSW15	10/6/1999	0	26 *U*	11 *U*	11 *U*	11 *U*	26 *U*	10 *U*	11 *U*
RSW16	river	RSW16	10/6/1999	0	25 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*
RSW17	river	RSW17	10/6/1999	0	25 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*
RSW18	Rriver	RSW18	10/5/1999	0	26 *U*	11 *U*	11 *U*	11 *U*	26 *U*	11 *U*	11 *U*
RSW19	Rriver	RSW19	10/5/1999	0	26 *U*	10 *U*	10 *U*	10 *U*	26 *U*	10 *U*	10 *U*
RSW20	river	RSW20	10/7/1999	0	24 *U*	10 *U*	10 *U*	10 *U*	24 *U*	10 *U*	10 *U*
RSW23	river	RSW23	10/7/1999	0	25 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*
RSW24	river	RSW24	12/10/1999	0	25 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*
SW24	river	SW24-RR	10/30/1997	0	25 *U*	10 *U*	10 *U*	10 *U*	25 *UJ*	10 *U*	10 *U*
SW25	river	SW25-RR	10/29/1997	0	25 *U*	10 *U*	10 *U*	10 *U*	25 *UJ*	10 *U*	10 *U*
SW26	marsh	SW26-DSM	10/29/1997	A	25 *U*	10 *U*	10 *U*	10 *U*	25 *UJ*	10 *U*	10 *U*
SW26	marsh	SW31-DSM	10/29/1997	B	25 *U*	10 *U*	10 *U*	10 *U*	25 *UJ*	10 *U*	10 *U*
SW27	river	SW27-RR	10/30/1997	0	25 *U*	10 *U*	10 *U*	10 *U*	25 *UJ*	10 *U*	10 *U*

Note: PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-12. Semivolatile organic compound results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	2-Chloro-naphthalene (µg/L unfiltered)	2-Chlorophenol (µg/L unfiltered)	2-Methyl-4,6-dinitrophenol (µg/L unfiltered)	2-Methyl-naphthalene (µg/L unfiltered)	2-Methylphenol (µg/L unfiltered)	2-Nitroaniline (µg/L unfiltered)	2-Nitrophenol (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*	25 *U*	10 *U*
RSW02	Rriver	RSW02	10/8/1999	0	11 *U*	11 *U*	27 *U*	11 *U*	11 *U*	27 *U*	11 *U*
RSW03	river	RSW03	12/16/1999	0	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*	25 *U*	10 *U*
RSW04	river	RSW04	10/8/1999	0	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*	25 *U*	10 *U*
RSW05	river	RSW05	12/16/1999	0	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*	25 *U*	10 *U*
RSW06	river	RSW06	12/16/1999	0	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*	25 *U*	10 *U*
RSW07	river	RSW07	10/8/1999	0	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*	25 *U*	10 *U*
RSW08	river	RSW08	10/8/1999	0	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*	25 *U*	10 *U*
RSW09	river	RSW09	10/7/1999	0	10 *U*	10 *U*	26 *U*	10 *U*	10 *U*	26 *U*	10 *U*
RSW10	river	RSW10	10/7/1999	0	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*	25 *U*	10 *U*
RSW11	river	RSW11	10/6/1999	0	10 *U*	10 *U*	26 *U*	10 *U*	10 *U*	26 *U*	10 *U*
RSW12	river	RSW12	10/8/1999	0	10 *U*	10 *U*	24 *U*	10 *U*	10 *U*	24 *U*	10 *U*
RSW13	river	RSW13	10/6/1999	0	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*	25 *U*	10 *U*
RSW14	river	RSW14	10/7/1999	0	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*	25 *U*	10 *U*
RSW15	river	RSW15	10/6/1999	0	11 *U*	11 *U*	26 *U*	11 *U*	11 *U*	26 *U*	11 *U*
RSW16	river	RSW16	10/6/1999	0	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*	25 *U*	10 *U*
RSW17	river	RSW17	10/6/1999	0	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*	25 *U*	10 *U*
RSW18	Rriver	RSW18	10/5/1999	0	11 *U*	11 *U*	26 *U*	11 *U*	11 *U*	26 *U*	11 *U*
RSW19	Rriver	RSW19	10/5/1999	0	10 *U*	10 *U*	26 *U*	10 *U*	10 *U*	26 *U*	10 *U*
RSW20	river	RSW20	10/7/1999	0	10 *U*	10 *U*	24 *U*	10 *U*	10 *U*	24 *U*	10 *U*
RSW23	river	RSW23	10/7/1999	0	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*	25 *U*	10 *U*
RSW24	river	RSW24	12/10/1999	0	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*	25 *U*	10 *U*
SW24	river	SW24-RR	10/30/1997	0	10 *U*	10 *U*	25 *UJ*	10 *U*	10 *U*	25 *U*	10 *U*
SW25	river	SW25-RR	10/29/1997	0	10 *U*	10 *U*	25 *U*	10 *U*	10 *U*	25 *U*	10 *U*
SW26	marsh	SW26-DSM	10/29/1997	A	10 *U*	10 *U*	25 *UJ*	10 *U*	10 *U*	25 *U*	10 *U*
SW26	marsh	SW31-DSM	10/29/1997	B	10 *U*	10 *U*	25 *UJ*	10 *U*	10 *U*	25 *U*	10 *U*
SW27	river	SW27-RR	10/30/1997	0	10 *U*	10 *U*	25 *UJ*	10 *U*	10 *U*	25 *U*	10 *U*

Note: PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-12. Semivolatile organic compound results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	3,3'-Dichloro-benzidine (µg/L unfiltered)	3-Nitroaniline (µg/L unfiltered)	4-Bromophenyl-phenyl ether (µg/L unfiltered)	4-Chloro-3-methylphenol (µg/L unfiltered)	4-Chloroaniline (µg/L unfiltered)	4-Chlorophenyl-phenyl ether (µg/L unfiltered)	4-Methylphenol (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0	10 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW02	Rriver	RSW02	10/8/1999	0	11 *U*	27 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*
RSW03	river	RSW03	12/16/1999	0	10 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW04	river	RSW04	10/8/1999	0	10 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW05	river	RSW05	12/16/1999	0	10 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW06	river	RSW06	12/16/1999	0	10 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW07	river	RSW07	10/8/1999	0	10 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW08	river	RSW08	10/8/1999	0	10 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW09	river	RSW09	10/7/1999	0	10 *U*	26 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW10	river	RSW10	10/7/1999	0	10 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW11	river	RSW11	10/6/1999	0	10 *U*	26 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW12	river	RSW12	10/8/1999	0	10 *U*	24 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW13	river	RSW13	10/6/1999	0	10 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW14	river	RSW14	10/7/1999	0	10 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW15	river	RSW15	10/6/1999	0	11 *U*	26 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*
RSW16	river	RSW16	10/6/1999	0	10 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW17	river	RSW17	10/6/1999	0	10 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW18	Rriver	RSW18	10/5/1999	0	11 *U*	26 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*
RSW19	Rriver	RSW19	10/5/1999	0	10 *U*	26 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW20	river	RSW20	10/7/1999	0	10 *U*	24 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW23	river	RSW23	10/7/1999	0	10 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW24	river	RSW24	12/10/1999	0	10 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
SW24	river	SW24-RR	10/30/1997	0	10 *U*	25 *U*	10 *U*	10 *U*	10 *UJ*	10 *U*	10 *U*
SW25	river	SW25-RR	10/29/1997	0	10 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
SW26	marsh	SW26-DSM	10/29/1997	A	10 *U*	25 *U*	10 *U*	10 *U*	10 *UJ*	10 *U*	10 *U*
SW26	marsh	SW31-DSM	10/29/1997	B	10 *U*	25 *U*	10 *U*	10 *U*	10 *UJ*	10 *U*	10 *U*
SW27	river	SW27-RR	10/30/1997	0	10 *U*	25 *U*	10 *U*	10 *U*	10 *UJ*	10 *U*	10 *U*

Note:
PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-12. Semivolatile organic compound results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	4-Nitroaniline (µg/L unfiltered)	4-Nitrophenol (µg/L unfiltered)	Acenaphthene (µg/L unfiltered)	Acenaph-thylene (µg/L unfiltered)	Acetophenone (µg/L unfiltered)	Anthracene (µg/L unfiltered)	Atrazine (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0	25 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW02	Rriver	RSW02	10/8/1999	0	27 *U*	27 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*
RSW03	river	RSW03	12/16/1999	0	25 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW04	river	RSW04	10/8/1999	0	25 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW05	river	RSW05	12/16/1999	0	25 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW06	river	RSW06	12/16/1999	0	25 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW07	river	RSW07	10/8/1999	0	25 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW08	river	RSW08	10/8/1999	0	25 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW09	river	RSW09	10/7/1999	0	26 *U*	26 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW10	river	RSW10	10/7/1999	0	25 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW11	river	RSW11	10/6/1999	0	26 *U*	26 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW12	river	RSW12	10/8/1999	0	24 *U*	24 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW13	river	RSW13	10/6/1999	0	25 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW14	river	RSW14	10/7/1999	0	25 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW15	river	RSW15	10/6/1999	0	26 *U*	26 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*
RSW16	river	RSW16	10/6/1999	0	25 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW17	river	RSW17	10/6/1999	0	25 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW18	Rriver	RSW18	10/5/1999	0	26 *U*	26 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*
RSW19	Rriver	RSW19	10/5/1999	0	26 *U*	26 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW20	river	RSW20	10/7/1999	0	24 *U*	24 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW23	river	RSW23	10/7/1999	0	25 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW24	river	RSW24	12/10/1999	0	25 *U*	25 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
SW24	river	SW24-RR	10/30/1997	0	25 *U*	25 *UJ*	10 *U*	10 *U*		10 *U*	
SW25	river	SW25-RR	10/29/1997	0	25 *U*	25 *U*	10 *U*	10 *U*		10 *U*	
SW26	marsh	SW26-DSM	10/29/1997	A	25 *U*	25 *U*	10 *U*	10 *U*		10 *U*	
SW26	marsh	SW31-DSM	10/29/1997	B	25 *U*	25 *U*	10 *U*	10 *U*		10 *U*	
SW27	river	SW27-RR	10/30/1997	0	25 *U*	25 *UJ*	10 *U*	10 *U*		10 *U*	

Note: PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-12. Semivolatile organic compound results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	Benz[a]-anthracene (µg/L unfiltered)	Benzaldehyde (µg/L unfiltered)	Benzo[a]pyrene (µg/L unfiltered)	Benzo[b]-fluoranthene (µg/L unfiltered)	Benzo[ghi]-perylene (µg/L unfiltered)	Benzo[k]-fluoranthene (µg/L unfiltered)	Biphenyl (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW02	Rriver	RSW02	10/8/1999	0	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*
RSW03	river	RSW03	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW04	river	RSW04	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW05	river	RSW05	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW06	river	RSW06	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW07	river	RSW07	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW08	river	RSW08	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW09	river	RSW09	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW10	river	RSW10	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW11	river	RSW11	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW12	river	RSW12	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW13	river	RSW13	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW14	river	RSW14	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW15	river	RSW15	10/6/1999	0	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*
RSW16	river	RSW16	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW17	river	RSW17	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW18	Rriver	RSW18	10/5/1999	0	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*
RSW19	Rriver	RSW19	10/5/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW20	river	RSW20	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW23	river	RSW23	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW24	river	RSW24	12/10/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
SW24	river	SW24-RR	10/30/1997	0	10 *U*		10 *U*	10 *U*	10 *U*	10 *U*	
SW25	river	SW25-RR	10/29/1997	0	10 *U*		10 *U*	10 *U*	10 *U*	10 *U*	
SW26	marsh	SW26-DSM	10/29/1997	A	10 *U*		10 *U*	10 *U*	10 *U*	10 *U*	
SW26	marsh	SW31-DSM	10/29/1997	B	10 *U*		10 *U*	10 *U*	10 *U*	10 *U*	
SW27	river	SW27-RR	10/30/1997	0	10 *U*		10 *U*	10 *U*	10 *U*	10 *U*	

Note:
PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-12. Semivolatile organic compound results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	bis[2-chloroethoxy]-methane (µg/L unfiltered)	bis[2-chloroethyl]-ether (µg/L unfiltered)	Bis[2-chloroisopropyl] ether (µg/L unfiltered)	bis[2-Ethylhexyl] phthalate (µg/L unfiltered)	Butylbenzyl phthalate (µg/L unfiltered)	Caprolactam (µg/L unfiltered)	Carbazole (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0	10 *U*	10 *U*		10 *U*	10 *U*	10 *U*	10 *U*
RSW02	Rriver	RSW02	10/8/1999	0	11 *U*	11 *U*		11 *U*	11 *U*	11 *U*	11 *U*
RSW03	river	RSW03	12/16/1999	0	10 *U*	10 *U*		10 *U*	10 *U*	10 *U*	10 *U*
RSW04	river	RSW04	10/8/1999	0	10 *U*	10 *U*		10 *U*	10 *U*	10 *U*	10 *U*
RSW05	river	RSW05	12/16/1999	0	10 *U*	10 *U*		10 *U*	10 *U*	10 *U*	10 *U*
RSW06	river	RSW06	12/16/1999	0	10 *U*	10 *U*		10 *U*	10 *U*	10 *U*	10 *U*
RSW07	river	RSW07	10/8/1999	0	10 *U*	10 *U*		10 *U*	10 *U*	10 *U*	10 *U*
RSW08	river	RSW08	10/8/1999	0	10 *U*	10 *U*		10 *U*	10 *U*	10 *U*	10 *U*
RSW09	river	RSW09	10/7/1999	0	10 *U*	10 *U*		10 *U*	10 *U*	10 *U*	10 *U*
RSW10	river	RSW10	10/7/1999	0	10 *U*	10 *U*		10 *U*	10 *U*	10 *U*	10 *U*
RSW11	river	RSW11	10/6/1999	0	10 *U*	10 *U*		10 *U*	10 *U*	10 *U*	10 *U*
RSW12	river	RSW12	10/8/1999	0	10 *U*	10 *U*		10 *U*	10 *U*	10 *U*	10 *U*
RSW13	river	RSW13	10/6/1999	0	10 *U*	10 *U*		3.0	10 *U*	10 *U*	10 *U*
RSW14	river	RSW14	10/7/1999	0	10 *U*	10 *U*		10 *U*	10 *U*	10 *U*	10 *U*
RSW15	river	RSW15	10/6/1999	0	11 *U*	11 *U*		11 *U*	11 *U*	11 *U*	11 *U*
RSW16	river	RSW16	10/6/1999	0	10 *U*	10 *U*		10 *U*	10 *U*	10 *U*	10 *U*
RSW17	river	RSW17	10/6/1999	0	10 *U*	10 *U*		10 *U*	10 *U*	10 *U*	10 *U*
RSW18	Rriver	RSW18	10/5/1999	0	11 *U*	11 *U*		11 *U*	11 *U*	11 *U*	11 *U*
RSW19	Rriver	RSW19	10/5/1999	0	10 *U*	10 *U*		10 *U*	10 *U*	10 *U*	10 *U*
RSW20	river	RSW20	10/7/1999	0	10 *U*	10 *U*		10 *U*	10 *U*	10 *U*	10 *U*
RSW23	river	RSW23	10/7/1999	0	10 *U*	10 *U*		10 *U*	10 *U*	10 *U*	10 *U*
RSW24	river	RSW24	12/10/1999	0	10 *U*	10 *U*		10 *U*	10 *U*	10 *U*	10 *U*
SW24	river	SW24-RR	10/30/1997	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*		10 *U*
SW25	river	SW25-RR	10/29/1997	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*		10 *U*
SW26	marsh	SW26-DSM	10/29/1997	A	10 *U*	10 *U*	10 *UJ*	10 *U*	10 *U*		10 *UJ*
SW26	marsh	SW31-DSM	10/29/1997	B	10 *U*	10 *U*	10 *UJ*	1.0 *J*	10 *U*		10 *UJ*
SW27	river	SW27-RR	10/30/1997	0	10 *U*	10 *U*	10 *U*	2.0 *J*	10 *U*		10 *U*

Note: PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-12. Semivolatile organic compound results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	Chrysene (µg/L unfiltered)	Dibenz[a,h]-anthracene (µg/L unfiltered)	Dibenzofuran (µg/L unfiltered)	Diethyl phthalate (µg/L unfiltered)	Dimethyl phthalate (µg/L unfiltered)	Di-n-butyl phthalate (µg/L unfiltered)	Di-n-octyl phthalate (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW02	Rriver	RSW02	10/8/1999	0	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*
RSW03	river	RSW03	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW04	river	RSW04	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW05	river	RSW05	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW06	river	RSW06	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW07	river	RSW07	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW08	river	RSW08	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW09	river	RSW09	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW10	river	RSW10	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW11	river	RSW11	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW12	river	RSW12	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW13	river	RSW13	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW14	river	RSW14	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW15	river	RSW15	10/6/1999	0	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*
RSW16	river	RSW16	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW17	river	RSW17	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW18	Rriver	RSW18	10/5/1999	0	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*
RSW19	Rriver	RSW19	10/5/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW20	river	RSW20	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW23	river	RSW23	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW24	river	RSW24	12/10/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	1.0	10 *U*
SW24	river	SW24-RR	10/30/1997	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
SW25	river	SW25-RR	10/29/1997	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
SW26	marsh	SW26-DSM	10/29/1997	A	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *UJ*
SW26	marsh	SW31-DSM	10/29/1997	B	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *UJ*
SW27	river	SW27-RR	10/30/1997	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*

Note: PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-12. Semivolatile organic compound results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	Fluoranthene (µg/L unfiltered)	Fluorene (µg/L unfiltered)	Hexachloro-benzene (µg/L unfiltered)	Hexachloro-butadiene (µg/L unfiltered)	Hexachloro-cyclo-pentadiene (µg/L unfiltered)	Hexachloro-ethane (µg/L unfiltered)	Indeno[1,2,3-cd]pyrene (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW02	Rriver	RSW02	10/8/1999	0	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*
RSW03	river	RSW03	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW04	river	RSW04	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW05	river	RSW05	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW06	river	RSW06	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW07	river	RSW07	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW08	river	RSW08	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW09	river	RSW09	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW10	river	RSW10	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW11	river	RSW11	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW12	river	RSW12	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW13	river	RSW13	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW14	river	RSW14	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW15	river	RSW15	10/6/1999	0	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*
RSW16	river	RSW16	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW17	river	RSW17	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW18	Rriver	RSW18	10/5/1999	0	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*
RSW19	Rriver	RSW19	10/5/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW20	river	RSW20	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW23	river	RSW23	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RSW24	river	RSW24	12/10/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
SW24	river	SW24-RR	10/30/1997	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *UJ*	10 *U*	10 *U*
SW25	river	SW25-RR	10/29/1997	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
SW26	marsh	SW26-DSM	10/29/1997	A	10 *U*	10 *U*	10 *U*	10 *U*	10 *UJ*	10 *U*	10 *U*
SW26	marsh	SW31-DSM	10/29/1997	B	10 *U*	10 *U*	10 *U*	10 *U*	10 *UJ*	10 *U*	10 *U*
SW27	river	SW27-RR	10/30/1997	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *UJ*	10 *U*	10 *U*

Note:
PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-12. Semivolatile organic compound results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	Isophorone (µg/L unfiltered)	Naphthalene (µg/L unfiltered)	Nitrobenzene (µg/L unfiltered)	N-nitroso-di-n-propylamine (µg/L unfiltered)	N-nitroso-diphenylamine (µg/L unfiltered)	Pentachloro-phenol (µg/L unfiltered)	Phenanthrene (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*
RSW02	Rriver	RSW02	10/8/1999	0	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	27 *U*	11 *U*
RSW03	river	RSW03	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*
RSW04	river	RSW04	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*
RSW05	river	RSW05	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*
RSW06	river	RSW06	12/16/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*
RSW07	river	RSW07	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*
RSW08	river	RSW08	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*
RSW09	river	RSW09	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	26 *U*	10 *U*
RSW10	river	RSW10	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*
RSW11	river	RSW11	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	26 *U*	10 *U*
RSW12	river	RSW12	10/8/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	24 *U*	10 *U*
RSW13	river	RSW13	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*
RSW14	river	RSW14	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*
RSW15	river	RSW15	10/6/1999	0	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	26 *U*	11 *U*
RSW16	river	RSW16	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*
RSW17	river	RSW17	10/6/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*
RSW18	Rriver	RSW18	10/5/1999	0	11 *U*	11 *U*	11 *U*	11 *U*	11 *U*	26 *U*	11 *U*
RSW19	Rriver	RSW19	10/5/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	26 *U*	10 *U*
RSW20	river	RSW20	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	24 *U*	10 *U*
RSW23	river	RSW23	10/7/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*
RSW24	river	RSW24	12/10/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*
SW24	river	SW24-RR	10/30/1997	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	25 *UJ*	10 *U*
SW25	river	SW25-RR	10/29/1997	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	25 *U*	10 *U*
SW26	marsh	SW26-DSM	10/29/1997	A	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	25 *UJ*	10 *U*
SW26	marsh	SW31-DSM	10/29/1997	B	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	25 *UJ*	10 *U*
SW27	river	SW27-RR	10/30/1997	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	25 *UJ*	10 *U*

Note:
PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-12. Semivolatile organic compound results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	Phenol (µg/L unfiltered)	Pyrene (µg/L unfiltered)	Total PAHs (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0	10 *U*	10 *U*	160 *U*
RSW02	Rriver	RSW02	10/8/1999	0	11 *U*	11 *U*	180 *U*
RSW03	river	RSW03	12/16/1999	0	10 *U*	10 *U*	160 *U*
RSW04	river	RSW04	10/8/1999	0	10 *U*	10 *U*	160 *U*
RSW05	river	RSW05	12/16/1999	0	10 *U*	10 *U*	160 *U*
RSW06	river	RSW06	12/16/1999	0	10 *U*	10 *U*	160 *U*
RSW07	river	RSW07	10/8/1999	0	10 *U*	10 *U*	160 *U*
RSW08	river	RSW08	10/8/1999	0	10 *U*	10 *U*	160 *U*
RSW09	river	RSW09	10/7/1999	0	10 *U*	10 *U*	160 *U*
RSW10	river	RSW10	10/7/1999	0	10 *U*	10 *U*	160 *U*
RSW11	river	RSW11	10/6/1999	0	10 *U*	10 *U*	160 *U*
RSW12	river	RSW12	10/8/1999	0	10 *U*	10 *U*	160 *U*
RSW13	river	RSW13	10/6/1999	0	10 *U*	10 *U*	160 *U*
RSW14	river	RSW14	10/7/1999	0	10 *U*	10 *U*	160 *U*
RSW15	river	RSW15	10/6/1999	0	11 *U*	11 *U*	180 *U*
RSW16	river	RSW16	10/6/1999	0	10 *U*	10 *U*	160 *U*
RSW17	river	RSW17	10/6/1999	0	10 *U*	10 *U*	160 *U*
RSW18	Rriver	RSW18	10/5/1999	0	11 *U*	11 *U*	180 *U*
RSW19	Rriver	RSW19	10/5/1999	0	10 *U*	10 *U*	160 *U*
RSW20	river	RSW20	10/7/1999	0	10 *U*	10 *U*	160 *U*
RSW23	river	RSW23	10/7/1999	0	10 *U*	10 *U*	160 *U*
RSW24	river	RSW24	12/10/1999	0	10 *U*	10 *U*	160 *U*
SW24	river	SW24-RR	10/30/1997	0	10 *U*	10 *U*	160 *U*
SW25	river	SW25-RR	10/29/1997	0	10 *U*	10 *U*	160 *U*
SW26	marsh	SW26-DSM	10/29/1997	A	10 *U*	10 *U*	160 *U*
SW26	marsh	SW31-DSM	10/29/1997	B	10 *U*	10 *U*	160 *U*
SW27	river	SW27-RR	10/30/1997	0	10 *U*	10 *U*	160 *U*

Note:
PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-13. Pesticide/PCB results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	4,4'-DDD (8081A NONE) (µg/L unfiltered)	4,4'-DDD (TCPPCB NONE) (µg/L unfiltered)	4,4'-DDE (8081A NONE) (µg/L unfiltered)	4,4'-DDE (TCPPCB NONE) (µg/L unfiltered)	4,4'-DDT (8081A NONE) (µg/L unfiltered)	4,4'-DDT (TCPPCB NONE) (µg/L unfiltered)	Aldrin (8081A NONE) (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0		0.10 *U*		0.10 *U*		0.10 *U*	
RSW02	Rriver	RSW02	10/8/1999	0		0.11		0.11		0.11	
RSW03	river	RSW03	12/16/1999	0		0.10 *U*		0.10 *U*		0.10 *U*	
RSW04	river	RSW04	10/8/1999	0		0.099 *U*		0.099 *U*		0.099 *U*	
RSW05	river	RSW05	12/16/1999	0		0.10 *U*		0.10 *U*		0.10 *U*	
RSW06	river	RSW06	12/16/1999	0		0.10 *U*		0.10 *U*		0.10 *U*	
RSW07	river	RSW07	10/8/1999	0		0.097 *U*		0.097 *U*		0.097 *U*	
RSW08	river	RSW08	10/8/1999	0		0.10 *U*		0.10 *U*		0.10 *U*	
RSW09	river	RSW09	10/7/1999	0		0.10 *U*		0.10 *U*		0.10 *U*	
RSW10	river	RSW10	10/7/1999	0		0.098 *U*		0.098 *U*		0.098 *U*	
RSW11	river	RSW11	10/6/1999	0		0.098 *U*		0.098 *U*		0.098 *U*	
RSW12	river	RSW12	10/8/1999	0		0.099 *U*		0.099 *U*		0.099 *U*	
RSW13	river	RSW13	10/6/1999	0		0.10 *U*		0.10 *U*		0.10 *U*	
RSW14	river	RSW14	10/7/1999	0		0.098 *U*		0.098 *U*		0.098 *U*	
RSW15	river	RSW15	10/6/1999	0		0.096 *U*		0.096 *U*		0.096 *U*	
RSW16	river	RSW16	10/6/1999	0		0.10 *U*		0.10 *U*		0.10 *U*	
RSW17	river	RSW17	10/6/1999	0		0.099 *U*		0.099 *U*		0.099 *U*	
RSW18	Rriver	RSW18	10/5/1999	0		0.098 *U*		0.098 *U*		0.098 *U*	
RSW19	Rriver	RSW19	10/5/1999	0		0.098 *U*		0.098 *U*		0.098 *U*	
RSW20	river	RSW20	10/7/1999	0		0.10 *U*		0.10 *U*		0.10 *U*	
RSW23	river	RSW23	10/7/1999	0		0.094 *U*		0.094 *U*		0.094 *U*	
RSW24	river	RSW24	12/10/1999	0		0.10 *U*		0.10 *U*		0.10 *U*	
SW24	river	SW24-RR	10/30/1997	0	0.097 *U*		0.097 *U*		0.097 *U*		0.048 *U*
SW25	river	SW25-RR	10/29/1997	0	0.10 *U*		0.10 *U*		0.10 *U*		0.052 *U*
SW26	marsh	SW26-DSM	10/29/1997	A	0.095 *U*		0.095 *U*		0.095 *U*		0.048 *U*
SW26	marsh	SW31-DSM	10/29/1997	B	0.096 *U*		0.096 *U*		0.096 *U*		0.048 *U*
SW27	river	SW27-RR	10/30/1997	0	0.098 *U*		0.098 *U*		0.098 *U*		0.049 *U*

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-13. Pesticide/PCB results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	Aldrin (TCPPCB NONE) (µg/L unfiltered)	alpha-Chlordane (8081A NONE) (µg/L unfiltered)	alpha-Chlordane (TCPPCB NONE) (µg/L unfiltered)	alpha-Endosulfan (8081A NONE) (µg/L unfiltered)	alpha-Endosulfan (TCPPCB NONE) (µg/L unfiltered)	alpha-Hexachloro-cyclohexane (8081A NONE) (µg/L unfiltered)	alpha-Hexachloro-cyclohexane (TCPPCB NONE) (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0	0.050 *U*		0.050 *U*		0.050 *U*		0.050 *U*
RSW02	Rriver	RSW02	10/8/1999	0	0.054		0.054		0.054		0.054
RSW03	river	RSW03	12/16/1999	0	0.050 *U*		0.050 *U*		0.050 *U*		0.050 *U*
RSW04	river	RSW04	10/8/1999	0	0.050 *U*		0.050 *U*		0.050 *U*		0.050 *U*
RSW05	river	RSW05	12/16/1999	0	0.050 *U*		0.050 *U*		0.050 *U*		0.050 *U*
RSW06	river	RSW06	12/16/1999	0	0.050 *U*		0.050 *U*		0.050 *U*		0.050 *U*
RSW07	river	RSW07	10/8/1999	0	0.049 *U*		0.049 *U*		0.049 *U*		0.049 *U*
RSW08	river	RSW08	10/8/1999	0	0.050 *U*		0.050 *U*		0.050 *U*		0.050 *U*
RSW09	river	RSW09	10/7/1999	0	0.050 *U*		0.050 *U*		0.050 *U*		0.050 *U*
RSW10	river	RSW10	10/7/1999	0	0.049 *U*		0.049 *U*		0.049 *U*		0.049 *U*
RSW11	river	RSW11	10/6/1999	0	0.049 *U*		0.049 *U*		0.049 *U*		0.049 *U*
RSW12	river	RSW12	10/8/1999	0	0.050 *U*		0.050 *U*		0.050 *U*		0.050 *U*
RSW13	river	RSW13	10/6/1999	0	0.052 *U*		0.052 *U*		0.052 *U*		0.052 *U*
RSW14	river	RSW14	10/7/1999	0	0.049 *U*		0.049 *U*		0.049 *U*		0.049 *U*
RSW15	river	RSW15	10/6/1999	0	0.048 *U*		0.048 *U*		0.048 *U*		0.048 *U*
RSW16	river	RSW16	10/6/1999	0	0.051 *U*		0.051 *U*		0.051 *U*		0.051 *U*
RSW17	river	RSW17	10/6/1999	0	0.050 *U*		0.050 *U*		0.050 *U*		0.050 *U*
RSW18	Rriver	RSW18	10/5/1999	0	0.049 *U*		0.049 *U*		0.049 *U*		0.049 *U*
RSW19	Rriver	RSW19	10/5/1999	0	0.049 *U*		0.049 *U*		0.049 *U*		0.049 *U*
RSW20	river	RSW20	10/7/1999	0	0.050 *U*		0.050 *U*		0.050 *U*		0.050 *U*
RSW23	river	RSW23	10/7/1999	0	0.047 *U*		0.047 *U*		0.047 *U*		0.047 *U*
RSW24	river	RSW24	12/10/1999	0	0.050 *U*		0.050 *U*		0.050 *U*		0.050 *U*
SW24	river	SW24-RR	10/30/1997	0		0.048 *U*		0.048 *U*		0.048 *U*	
SW25	river	SW25-RR	10/29/1997	0		0.052 *U*		0.052 *U*		0.052 *U*	
SW26	marsh	SW26-DSM	10/29/1997	A		0.048 *U*		0.048 *U*		0.048 *U*	
SW26	marsh	SW31-DSM	10/29/1997	B		0.048 *U*		0.048 *U*		0.048 *U*	
SW27	river	SW27-RR	10/30/1997	0		0.049 *U*		0.049 *U*		0.049 *U*	

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-13. Pesticide/PCB results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	beta-Endosulfan (8081A NONE) (µg/L unfiltered)	beta-Endosulfan (TCPPCB NONE) (µg/L unfiltered)	beta-Hexachloro cyclohexane (8081A NONE) (µg/L unfiltered)	beta-Hexachloro cyclohexane (TCPPCB NONE) (µg/L unfiltered)	delta-Hexachloro-cyclohexane (8081A NONE) (µg/L unfiltered)	delta-Hexachloro-cyclohexane (TCPPCB NONE) (µg/L unfiltered)	Dieldrin (8081A NONE) (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0		0.10 *U*		0.050 *U*		0.050 *U*	
RSW02	Rriver	RSW02	10/8/1999	0		0.11		0.054		0.054	
RSW03	river	RSW03	12/16/1999	0		0.10 *U*		0.050 *U*		0.050 *U*	
RSW04	river	RSW04	10/8/1999	0		0.099 *U*		0.050 *U*		0.050 *U*	
RSW05	river	RSW05	12/16/1999	0		0.10 *U*		0.050 *U*		0.050 *U*	
RSW06	river	RSW06	12/16/1999	0		0.10 *U*		0.050 *U*		0.050 *U*	
RSW07	river	RSW07	10/8/1999	0		0.097 *U*		0.049 *U*		0.049 *U*	
RSW08	river	RSW08	10/8/1999	0		0.10 *U*		0.050 *U*		0.050 *U*	
RSW09	river	RSW09	10/7/1999	0		0.10 *U*		0.050 *U*		0.050 *U*	
RSW10	river	RSW10	10/7/1999	0		0.098 *U*		0.049 *U*		0.049 *U*	
RSW11	river	RSW11	10/6/1999	0		0.098 *U*		0.049 *U*		0.049 *U*	
RSW12	river	RSW12	10/8/1999	0		0.099 *U*		0.050 *U*		0.050 *U*	
RSW13	river	RSW13	10/6/1999	0		0.10 *U*		0.052 *U*		0.052 *U*	
RSW14	river	RSW14	10/7/1999	0		0.098 *U*		0.049 *U*		0.049 *U*	
RSW15	river	RSW15	10/6/1999	0		0.096 *U*		0.048 *U*		0.048 *U*	
RSW16	river	RSW16	10/6/1999	0		0.10 *U*		0.051 *U*		0.051 *U*	
RSW17	river	RSW17	10/6/1999	0		0.099 *U*		0.050 *U*		0.050 *U*	
RSW18	Rriver	RSW18	10/5/1999	0		0.098 *U*		0.049 *U*		0.049 *U*	
RSW19	Rriver	RSW19	10/5/1999	0		0.098 *U*		0.049 *U*		0.049 *U*	
RSW20	river	RSW20	10/7/1999	0		0.10 *U*		0.050 *U*		0.050 *U*	
RSW23	river	RSW23	10/7/1999	0		0.094 *U*		0.047 *U*		0.047 *U*	
RSW24	river	RSW24	12/10/1999	0		0.10 *U*		0.050 *U*		0.050 *U*	
SW24	river	SW24-RR	10/30/1997	0	0.097 *U*		0.048 *U*		0.048 *U*		0.097 *U*
SW25	river	SW25-RR	10/29/1997	0	0.10 *U*		0.052 *U*		0.052 *U*		0.10 *U*
SW26	marsh	SW26-DSM	10/29/1997	A	0.095 *U*		0.048 *U*		0.048 *U*		0.095 *U*
SW26	marsh	SW31-DSM	10/29/1997	B	0.096 *U*		0.048 *U*		0.048 *U*		0.096 *U*
SW27	river	SW27-RR	10/30/1997	0	0.098 *U*		0.0090 *J*		0.049 *U*		0.098 *U*

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-13. Pesticide/PCB results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	Dieldrin (TCPPCB NONE) (µg/L unfiltered)	Endosulfan sulfate (8081A NONE) (µg/L unfiltered)	Endosulfan sulfate (TCPPCB NONE) (µg/L unfiltered)	Endrin (8081A NONE) (µg/L unfiltered)	Endrin (TCPPCB NONE) (µg/L unfiltered)	Endrin aldehyde (8081A NONE) (µg/L unfiltered)	Endrin aldehyde (TCPPCB NONE) (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0	0.10 *U*		0.10 *U*		0.10 *U*		0.10 *U*
RSW02	Rriver	RSW02	10/8/1999	0	0.11		0.11		0.11		0.11
RSW03	river	RSW03	12/16/1999	0	0.10 *U*		0.10 *U*		0.10 *U*		0.10 *U*
RSW04	river	RSW04	10/8/1999	0	0.099 *U*		0.099 *U*		0.099 *U*		0.099 *U*
RSW05	river	RSW05	12/16/1999	0	0.10 *U*		0.10 *U*		0.10 *U*		0.10 *U*
RSW06	river	RSW06	12/16/1999	0	0.10 *U*		0.10 *U*		0.10 *U*		0.10 *U*
RSW07	river	RSW07	10/8/1999	0	0.097 *U*		0.097 *U*		0.097 *U*		0.097 *U*
RSW08	river	RSW08	10/8/1999	0	0.10 *U*		0.10 *U*		0.10 *U*		0.10 *U*
RSW09	river	RSW09	10/7/1999	0	0.10 *U*		0.10 *U*		0.10 *U*		0.10 *U*
RSW10	river	RSW10	10/7/1999	0	0.098 *U*		0.098 *U*		0.098 *U*		0.098 *U*
RSW11	river	RSW11	10/6/1999	0	0.098 *U*		0.098 *U*		0.098 *U*		0.098 *U*
RSW12	river	RSW12	10/8/1999	0	0.099 *U*		0.099 *U*		0.099 *U*		0.099 *U*
RSW13	river	RSW13	10/6/1999	0	0.10 *U*		0.10 *U*		0.10 *U*		0.10 *U*
RSW14	river	RSW14	10/7/1999	0	0.098 *U*		0.098 *U*		0.098 *U*		0.098 *U*
RSW15	river	RSW15	10/6/1999	0	0.096 *U*		0.096 *U*		0.096 *U*		0.096 *U*
RSW16	river	RSW16	10/6/1999	0	0.10 *U*		0.10 *U*		0.10 *U*		0.10 *U*
RSW17	river	RSW17	10/6/1999	0	0.099 *U*		0.099 *U*		0.099 *U*		0.099 *U*
RSW18	Rriver	RSW18	10/5/1999	0	0.098 *U*		0.098 *U*		0.098 *U*		0.098 *U*
RSW19	Rriver	RSW19	10/5/1999	0	0.098 *U*		0.098 *U*		0.098 *U*		0.098 *U*
RSW20	river	RSW20	10/7/1999	0	0.10 *U*		0.10 *U*		0.10 *U*		0.10 *U*
RSW23	river	RSW23	10/7/1999	0	0.094 *U*		0.094 *U*		0.094 *U*		0.094 *U*
RSW24	river	RSW24	12/10/1999	0	0.10 *U*		0.10 *U*		0.10 *U*		0.10 *U*
SW24	river	SW24-RR	10/30/1997	0		0.097 *U*		0.097 *U*		0.097 *U*	
SW25	river	SW25-RR	10/29/1997	0		0.10 *U*		0.10 *U*		0.10 *U*	
SW26	marsh	SW26-DSM	10/29/1997	A		0.095 *U*		0.095 *U*		0.095 *U*	
SW26	marsh	SW31-DSM	10/29/1997	B		0.096 *U*		0.096 *U*		0.096 *U*	
SW27	river	SW27-RR	10/30/1997	0		0.098 *U*		0.098 *U*		0.098 *U*	

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-13. Pesticide/PCB results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	Endrin ketone (8081A NONE) (µg/L unfiltered)	Endrin ketone (TCPPCB NONE) (µg/L unfiltered)	gamma-Chlordane (8081A NONE) (µg/L unfiltered)	gamma-Chlordane (TCPPCB NONE) (µg/L unfiltered)	gamma-Hexachloro-cyclohexane (8081A NONE) (µg/L unfiltered)	gamma-Hexachloro-cyclohexane (TCPPCB NONE) (µg/L unfiltered)	Heptachlor (8081A NONE) (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0		0.10 *U*		0.050 *U*		0.050 *U*	
RSW02	Rriver	RSW02	10/8/1999	0		0.11		0.054		0.054	
RSW03	river	RSW03	12/16/1999	0		0.10 *U*		0.050 *U*		0.050 *U*	
RSW04	river	RSW04	10/8/1999	0		0.099 *U*		0.050 *U*		0.050 *U*	
RSW05	river	RSW05	12/16/1999	0		0.10 *U*		0.050 *U*		0.050 *U*	
RSW06	river	RSW06	12/16/1999	0		0.10 *U*		0.050 *U*		0.050 *U*	
RSW07	river	RSW07	10/8/1999	0		0.097 *U*		0.049 *U*		0.049 *U*	
RSW08	river	RSW08	10/8/1999	0		0.10 *U*		0.050 *U*		0.050 *U*	
RSW09	river	RSW09	10/7/1999	0		0.10 *U*		0.050 *U*		0.050 *U*	
RSW10	river	RSW10	10/7/1999	0		0.098 *U*		0.049 *U*		0.049 *U*	
RSW11	river	RSW11	10/6/1999	0		0.098 *U*		0.049 *U*		0.049 *U*	
RSW12	river	RSW12	10/8/1999	0		0.099 *U*		0.050 *U*		0.055 *U*	
RSW13	river	RSW13	10/6/1999	0		0.10 *U*		0.052 *U*		0.052 *U*	
RSW14	river	RSW14	10/7/1999	0		0.098 *U*		0.049 *U*		0.049 *U*	
RSW15	river	RSW15	10/6/1999	0		0.096 *U*		0.048 *U*		0.048 *U*	
RSW16	river	RSW16	10/6/1999	0		0.10 *U*		0.051 *U*		0.051 *U*	
RSW17	river	RSW17	10/6/1999	0		0.099 *U*		0.050 *U*		0.055	
RSW18	Rriver	RSW18	10/5/1999	0		0.098 *U*		0.049 *U*		0.049 *U*	
RSW19	Rriver	RSW19	10/5/1999	0		0.098 *U*		0.049 *U*		0.049 *U*	
RSW20	river	RSW20	10/7/1999	0		0.10 *U*		0.050 *U*		0.050 *U*	
RSW23	river	RSW23	10/7/1999	0		0.094 *U*		0.047 *U*		0.047 *U*	
RSW24	river	RSW24	12/10/1999	0		0.10 *U*		0.050 *U*		0.050 *U*	
SW24	river	SW24-RR	10/30/1997	0	0.097 *U*		0.048 *U*		0.048 *U*		0.048 *U*
SW25	river	SW25-RR	10/29/1997	0	0.10 *U*		0.052 *U*		0.052 *U*		0.052 *U*
SW26	marsh	SW26-DSM	10/29/1997	A	0.095 *U*		0.048 *U*		0.048 *U*		0.048 *U*
SW26	marsh	SW31-DSM	10/29/1997	B	0.096 *U*		0.048 *U*		0.048 *U*		0.048 *U*
SW27	river	SW27-RR	10/30/1997	0	0.098 *U*		0.049 *U*		0.049 *U*		0.049 *U*

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-13. Pesticide/PCB results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	Heptachlor (TCPPCB NONE) (µg/L unfiltered)	Heptachlor epoxide (8081A NONE) (µg/L unfiltered)	Heptachlor epoxide (TCPPCB NONE) (µg/L unfiltered)	Methoxychlor (8081A NONE) (µg/L unfiltered)	Methoxychlor (TCPPCB NONE) (µg/L unfiltered)	Toxaphene (8081A NONE) (µg/L unfiltered)	Toxaphene (TCPPCB NONE) (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0	0.050 *U*		0.050 *U*		0.50 *U*		5.0 *U*
RSW02	Rriver	RSW02	10/8/1999	0	0.054		0.054		0.54		5.4
RSW03	river	RSW03	12/16/1999	0	0.050 *U*		0.050 *U*		0.50 *U*		5.0 *U*
RSW04	river	RSW04	10/8/1999	0	0.050 *U*		0.050 *U*		0.50 *U*		5.0 *U*
RSW05	river	RSW05	12/16/1999	0	0.050 *U*		0.050 *U*		0.50 *U*		5.0 *U*
RSW06	river	RSW06	12/16/1999	0	0.050 *U*		0.050 *U*		0.50 *U*		5.0 *U*
RSW07	river	RSW07	10/8/1999	0	0.049 *U*		0.049 *U*		0.49 *U*		4.9 *U*
RSW08	river	RSW08	10/8/1999	0	0.050 *U*		0.050 *U*		0.50 *U*		5.0 *U*
RSW09	river	RSW09	10/7/1999	0	0.050 *U*		0.050 *U*		0.50 *U*		5.0 *U*
RSW10	river	RSW10	10/7/1999	0	0.049 *U*		0.049 *U*		0.49 *U*		4.9 *U*
RSW11	river	RSW11	10/6/1999	0	0.049 *U*		0.049 *U*		0.49 *U*		4.9 *U*
RSW12	river	RSW12	10/8/1999	0	0.050 *U*		0.059 *U*		0.50 *U*		5.0 *U*
RSW13	river	RSW13	10/6/1999	0	0.052 *U*		0.052 *U*		0.52 *U*		5.2 *U*
RSW14	river	RSW14	10/7/1999	0	0.049 *U*		0.049 *U*		0.49 *U*		4.9 *U*
RSW15	river	RSW15	10/6/1999	0	0.048 *U*		0.048 *U*		0.48 *U*		4.8 *U*
RSW16	river	RSW16	10/6/1999	0	0.051 *U*		0.051 *U*		0.51 *U*		5.1 *U*
RSW17	river	RSW17	10/6/1999	0	0.050 *U*		0.059		0.50 *U*		5.0 *U*
RSW18	Rriver	RSW18	10/5/1999	0	0.049 *U*		0.049 *U*		0.49 *U*		4.9 *U*
RSW19	Rriver	RSW19	10/5/1999	0	0.049 *U*		0.049 *U*		0.49 *U*		4.9 *U*
RSW20	river	RSW20	10/7/1999	0	0.050 *U*		0.050 *U*		0.50 *U*		5.0 *U*
RSW23	river	RSW23	10/7/1999	0	0.047 *U*		0.047 *U*		0.47 *U*		4.7 *U*
RSW24	river	RSW24	12/10/1999	0	0.050 *U*		0.050 *U*		0.50 *U*		5.0 *U*
SW24	river	SW24-RR	10/30/1997	0		0.048 *U*		0.48 *U*		4.8 *U*	
SW25	river	SW25-RR	10/29/1997	0		0.052 *U*		0.52 *U*		5.2 *U*	
SW26	marsh	SW26-DSM	10/29/1997	A		0.048 *U*		0.48 *U*		4.8 *U*	
SW26	marsh	SW31-DSM	10/29/1997	B		0.048 *U*		0.48 *U*		4.8 *U*	
SW27	river	SW27-RR	10/30/1997	0		0.049 *U*		0.49 *U*		4.9 *U*	

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-13. Pesticide/PCB results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	Aroclor® 1016 (8082 NONE) (µg/L unfiltered)	Aroclor® 1016 (TCPPCB NONE) (µg/L unfiltered)	Aroclor® 1221 (8082 NONE) (µg/L unfiltered)	Aroclor® 1221 (TCPPCB NONE) (µg/L unfiltered)	Aroclor® 1232 (8082 NONE) (µg/L unfiltered)	Aroclor® 1232 (TCPPCB NONE) (µg/L unfiltered)	Aroclor® 1242 (8082 NONE) (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0		1.0 *U*		2.0 *U*		1.0 *U*	
RSW02	Rriver	RSW02	10/8/1999	0		1.1		2.2		1.1	
RSW03	river	RSW03	12/16/1999	0		1.0 *U*		2.0 *U*		1.0 *U*	
RSW04	river	RSW04	10/8/1999	0		0.99 *U*		2.0 *U*		0.99 *U*	
RSW05	river	RSW05	12/16/1999	0		1.0 *U*		2.0 *U*		1.0 *U*	
RSW06	river	RSW06	12/16/1999	0		1.0 *U*		2.0 *U*		1.0 *U*	
RSW07	river	RSW07	10/8/1999	0		0.97 *U*		1.9 *U*		0.97 *U*	
RSW08	river	RSW08	10/8/1999	0		1.0 *U*		2.0 *U*		1.0 *U*	
RSW09	river	RSW09	10/7/1999	0		1.0 *U*		2.0 *U*		1.0 *U*	
RSW10	river	RSW10	10/7/1999	0		0.98 *U*		2.0 *U*		0.98 *U*	
RSW11	river	RSW11	10/6/1999	0		0.98 *U*		2.0 *U*		0.98 *U*	
RSW12	river	RSW12	10/8/1999	0		0.99 *U*		2.0 *U*		0.99 *U*	
RSW13	river	RSW13	10/6/1999	0		1.0 *U*		2.1 *U*		1.0 *U*	
RSW14	river	RSW14	10/7/1999	0		0.98 *U*		2.0 *U*		0.98 *U*	
RSW15	river	RSW15	10/6/1999	0		0.96 *U*		1.9 *U*		0.96 *U*	
RSW16	river	RSW16	10/6/1999	0		1.0 *U*		2.0 *U*		1.0 *U*	
RSW17	river	RSW17	10/6/1999	0		0.99 *U*		2.0 *U*		0.99 *U*	
RSW18	Rriver	RSW18	10/5/1999	0		0.98 *U*		2.0 *U*		0.98 *U*	
RSW19	Rriver	RSW19	10/5/1999	0		0.98 *U*		2.0 *U*		0.98 *U*	
RSW20	river	RSW20	10/7/1999	0		1.0 *U*		2.0 *U*		1.0 *U*	
RSW23	river	RSW23	10/7/1999	0		0.94 *U*		1.9 *U*		0.94 *U*	
RSW24	river	RSW24	12/10/1999	0		1.0 *U*		2.0 *U*		1.0 *U*	
SW24	river	SW24-RR	10/30/1997	0	0.97 *U*		1.9 *U*		0.97 *U*		0.97 *U*
SW25	river	SW25-RR	10/29/1997	0	1.0 *U*		2.1 *U*		1.0 *U*		1.0 *U*
SW26	marsh	SW26-DSM	10/29/1997	A	0.95 *U*		1.9 *U*		0.95 *U*		0.95 *U*
SW26	marsh	SW31-DSM	10/29/1997	B	0.96 *U*		1.9 *U*		0.96 *U*		0.96 *U*
SW27	river	SW27-RR	10/30/1997	0	0.98 *U*		2.0 *U*		0.98 *U*		0.98 *U*

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-13. Pesticide/PCB results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	Aroclor® 1242 (TCPPCB NONE) (µg/L unfiltered)	Aroclor® 1248 (8082 NONE) (µg/L unfiltered)	Aroclor® 1248 (TCPPCB NONE) (µg/L unfiltered)	Aroclor® 1254 (8082 NONE) (µg/L unfiltered)	Aroclor® 1254 (TCPPCB NONE) (µg/L unfiltered)	Aroclor® 1260 (8082 NONE) (µg/L unfiltered)	Aroclor® 1260 (TCPPCB NONE) (µg/L unfiltered)	Polychlorinated biphenyls (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0	1.0 *U*		1.0 *U*		1.0 *U*		1.0 *U*	2.0 *U*
RSW02	Rriver	RSW02	10/8/1999	0	1.1		1.1		1.1		1.1	8.8
RSW03	river	RSW03	12/16/1999	0	1.0 *U*		1.0 *U*		1.0 *U*		1.0 *U*	2.0 *U*
RSW04	river	RSW04	10/8/1999	0	0.99 *U*		0.99 *U*		0.99 *U*		0.99 *U*	2.0 *U*
RSW05	river	RSW05	12/16/1999	0	1.0 *U*		1.0 *U*		1.0 *U*		1.0 *U*	2.0 *U*
RSW06	river	RSW06	12/16/1999	0	1.0 *U*		1.0 *U*		1.0 *U*		1.0 *U*	2.0 *U*
RSW07	river	RSW07	10/8/1999	0	0.97 *U*		0.97 *U*		0.97 *U*		0.97 *U*	1.9 *U*
RSW08	river	RSW08	10/8/1999	0	1.0 *U*		1.0 *U*		1.0 *U*		1.0 *U*	2.0 *U*
RSW09	river	RSW09	10/7/1999	0	1.0 *U*		1.0 *U*		1.0 *U*		1.0 *U*	2.0 *U*
RSW10	river	RSW10	10/7/1999	0	0.98 *U*		0.98 *U*		0.98 *U*		0.98 *U*	2.0 *U*
RSW11	river	RSW11	10/6/1999	0	0.98 *U*		0.98 *U*		0.98 *U*		0.98 *U*	2.0 *U*
RSW12	river	RSW12	10/8/1999	0	0.99 *U*		0.99 *U*		0.99 *U*		0.99 *U*	2.0 *U*
RSW13	river	RSW13	10/6/1999	0	1.0 *U*		1.0 *U*		1.0 *U*			2.1 *U*
RSW14	river	RSW14	10/7/1999	0	0.98 *U*		0.98 *U*		0.98 *U*		0.98 *U*	2.0 *U*
RSW15	river	RSW15	10/6/1999	0	0.96 *U*		0.96 *U*		0.96 *U*		0.96 *U*	1.9 *U*
RSW16	river	RSW16	10/6/1999	0	1.0 *U*		1.0 *U*		1.0 *U*		1.0 *U*	2.0 *U*
RSW17	river	RSW17	10/6/1999	0	0.99 *U*		0.99 *U*		0.99 *U*		0.99 *U*	2.0 *U*
RSW18	Rriver	RSW18	10/5/1999	0	0.98 *U*		0.98 *U*		0.98 *U*		0.98 *U*	2.0 *U*
RSW19	Rriver	RSW19	10/5/1999	0	0.98 *U*		0.98 *U*		0.98 *U*		0.98 *U*	2.0 *U*
RSW20	river	RSW20	10/7/1999	0	1.0 *U*		1.0 *U*		1.0 *U*		1.0 *U*	2.0 *U*
RSW23	river	RSW23	10/7/1999	0	0.94 *U*		0.94 *U*		0.94 *U*		0.94 *U*	1.9 *U*
RSW24	river	RSW24	12/10/1999	0	1.0 *U*		1.0 *U*		1.0 *U*		1.0 *U*	2.0 *U*
SW24	river	SW24-RR	10/30/1997	0		0.97 *U*		0.97 *U*		0.97 *U*		1.9 *U*
SW25	river	SW25-RR	10/29/1997	0		1.0 *U*		1.0 *U*		1.0 *U*		2.1 *U*
SW26	marsh	SW26-DSM	10/29/1997	A		0.95 *U*		0.95 *U*		0.95 *U*		1.9 *U*
SW26	marsh	SW31-DSM	10/29/1997	B		0.96 *U*		0.96 *U*		0.96 *U*		1.9 *U*
SW27	river	SW27-RR	10/30/1997	0		0.98 *U*		0.98 *U*		0.98 *U*		2.0 *U*

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-14. Inorganic analyte results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	Aluminum (TALMET NONE) (µg/L unfiltered)	Aluminum (TCLMET NONE) (µg/L unfiltered)	Antimony (TALMET NONE) (µg/L unfiltered)	Antimony (TCLMET NONE) (µg/L unfiltered)	Arsenic (TALMET NONE) (µg/L unfiltered)	Arsenic (TCLMET NONE) (µg/L unfiltered)	Barium (TALMET NONE) (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0	238		2.1 *U*		2.5		31.1
RSW02	Rriver	RSW02	10/8/1999	0	496		2.1 *U*		2.5		35.4
RSW03	river	RSW03	12/16/1999	0	340		2.1 *U*		2.2 *U*		32.1
RSW04	river	RSW04	10/8/1999	0	416		2.1 *U*		4.4		33.8
RSW05	river	RSW05	12/16/1999	0	421		2.1 *U*		2.2 *U*		30.2
RSW06	river	RSW06	12/16/1999	0	424		2.1 *U*		2.2		31.2
RSW07	river	RSW07	10/8/1999	0	395		2.1 *U*		4.8		35.0
RSW08	river	RSW08	10/8/1999	0	411		2.1 *U*		2.2 *U*		33.4
RSW09	river	RSW09	10/7/1999	0	466		2.1 *U*		2.2 *U*		36.8
RSW10	river	RSW10	10/7/1999	0	400		2.1 *U*		3.6		36.0
RSW11	river	RSW11	10/6/1999	0	712		2.1 *U*		3.9		37.8
RSW12	river	RSW12	10/8/1999	0	347		2.1 *U*		3.1		32.1
RSW13	river	RSW13	10/6/1999	0	503		2.1 *U*		2.2 *U*		39.8
RSW14	river	RSW14	10/7/1999	0	357		2.1 *U*		2.3		35.4
RSW15	river	RSW15	10/6/1999	0	1,350		2.1 *U*		3.8		42.0
RSW16	river	RSW16	10/6/1999	0	257		2.1 *U*		2.2 *U*		36.1
RSW17	river	RSW17	10/6/1999	0	911		2.1 *U*		5.2		31.0
RSW18	Rriver	RSW18	10/5/1999	0	249		2.1 *U*		2.2 *U*		38.4
RSW19	Rriver	RSW19	10/5/1999	0	263		2.1 *U*		2.4		37.6
RSW20	river	RSW20	10/7/1999	0	350		2.1 *U*		3.3		33.6
RSW23	river	RSW23	10/7/1999	0	355		2.1 *U*		2.2 *U*		35.9
RSW24	river	RSW24	12/10/1999	0	273		2.1 *U*		2.2 *U*		33.6
SW24	river	SW24-RR	10/30/1997	0		368 *J*		4.8 *U*		5.9	
SW25	river	SW25-RR	10/29/1997	0		2,310 *J*		5.7		20.3	
SW26	marsh	SW26-DSM	10/29/1997	A		1,240 *J*		6.3		535	
SW26	marsh	SW31-DSM	10/29/1997	B		1,330 *J*		4.8 *U*		569	
SW27	river	SW27-RR	10/30/1997	0		190		4.8 *U*		6.5	

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-14. Inorganic analyte results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	Barium (TCLMET NONE) (µg/L unfiltered)	Beryllium (TALMET NONE) (µg/L unfiltered)	Beryllium (TCLMET NONE) (µg/L unfiltered)	Cadmium (TALMET NONE) (µg/L unfiltered)	Cadmium (TCLMET NONE) (µg/L unfiltered)	Chromium (TALMET NONE) (µg/L unfiltered)	Chromium (TCLMET NONE) (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0		0.10 *U*		0.60		0.30 *U*	
RSW02	Rriver	RSW02	10/8/1999	0		0.10		1.8		0.30 *U*	
RSW03	river	RSW03	12/16/1999	0		0.10 *U*		0.40		0.30 *U*	
RSW04	river	RSW04	10/8/1999	0		0.10 *U*		0.80		0.30 *U*	
RSW05	river	RSW05	12/16/1999	0		0.10 *U*		0.40		0.30 *U*	
RSW06	river	RSW06	12/16/1999	0		0.10 *U*		0.60		0.30 *U*	
RSW07	river	RSW07	10/8/1999	0		0.10 *U*		0.30 *U*		0.30 *U*	
RSW08	river	RSW08	10/8/1999	0		0.10 *U*		1.4		0.30 *U*	
RSW09	river	RSW09	10/7/1999	0		0.10 *U*		1.3		0.30 *U*	
RSW10	river	RSW10	10/7/1999	0		0.10 *U*		1.0		0.30 *U*	
RSW11	river	RSW11	10/6/1999	0		0.10 *U*		1.1		0.80	
RSW12	river	RSW12	10/8/1999	0		0.10 *U*		0.90		0.30 *U*	
RSW13	river	RSW13	10/6/1999	0		0.10 *U*		0.80		0.30 *U*	
RSW14	river	RSW14	10/7/1999	0		0.10 *U*		1.0		0.30 *U*	
RSW15	river	RSW15	10/6/1999	0		0.10 *U*		1.0		2.4	
RSW16	river	RSW16	10/6/1999	0		0.10		1.0		0.30 *U*	
RSW17	river	RSW17	10/6/1999	0		0.30		0.80		0.30 *U*	
RSW18	Rriver	RSW18	10/5/1999	0		0.10 *U*		1.0		0.30 *U*	
RSW19	Rriver	RSW19	10/5/1999	0		0.10		1.0		0.30 *U*	
RSW20	river	RSW20	10/7/1999	0		0.10 *U*		0.80		0.30 *U*	
RSW23	river	RSW23	10/7/1999	0		0.10 *U*		0.80		0.30 *U*	
RSW24	river	RSW24	12/10/1999	0		0.10 *U*		0.40		0.30 *U*	
SW24	river	SW24-RR	10/30/1997	0	29.5		0.10 *U*		0.33		2.0
SW25	river	SW25-RR	10/29/1997	0	40.3		0.10 *U*		0.68		41.8
SW26	marsh	SW26-DSM	10/29/1997	A	75.5		0.10 *U*		0.81		18.5
SW26	marsh	SW31-DSM	10/29/1997	B	78.4		0.10 *U*		0.99		20.7
SW27	river	SW27-RR	10/30/1997	0	30.3		0.10 *U*		0.62		4.2

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-14. Inorganic analyte results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	Cobalt (TALMET NONE) (µg/L unfiltered)	Cobalt (TCLMET NONE) (µg/L unfiltered)	Copper (TALMET NONE) (µg/L unfiltered)	Copper (TCLMET NONE) (µg/L unfiltered)	Iron (TALMET NONE) (µg/L unfiltered)	Iron (TCLMET NONE) (µg/L unfiltered)	Lead (TALMET NONE) (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0	0.80		4.6		585		1.1 *U*
RSW02	Rriver	RSW02	10/8/1999	0	1.4		7.6		836		1.1 *U*
RSW03	river	RSW03	12/16/1999	0	0.80		5.5		621		1.1 *U*
RSW04	river	RSW04	10/8/1999	0	0.60 *U*		7.3		677		1.1 *U*
RSW05	river	RSW05	12/16/1999	0	0.60 *U*		4.9		786		1.1 *U*
RSW06	river	RSW06	12/16/1999	0	0.60 *U*		5.4		776		1.1 *U*
RSW07	river	RSW07	10/8/1999	0	0.60 *U*		12.8		652		1.1 *U*
RSW08	river	RSW08	10/8/1999	0	0.60 *U*		6.2		503		1.1 *U*
RSW09	river	RSW09	10/7/1999	0	0.60		7.4		819		1.1 *U*
RSW10	river	RSW10	10/7/1999	0	0.60 *U*		6.6		737		1.1 *U*
RSW11	river	RSW11	10/6/1999	0	0.60 *U*		7.8		1,070		1.1 *U*
RSW12	river	RSW12	10/8/1999	0	0.60 *U*		7.0		440		1.1 *U*
RSW13	river	RSW13	10/6/1999	0	0.60 *U*		13.6		605		1.1 *U*
RSW14	river	RSW14	10/7/1999	0	0.60 *U*		5.4		640		1.1 *U*
RSW15	river	RSW15	10/6/1999	0	0.60 *U*		22.8		2,300		4.8
RSW16	river	RSW16	10/6/1999	0	2.5		6.9		1,170		1.1 *U*
RSW17	river	RSW17	10/6/1999	0	10.2		11.0		3,550		1.1 *U*
RSW18	Rriver	RSW18	10/5/1999	0	0.60 *U*		7.4		379		1.1 *U*
RSW19	Rriver	RSW19	10/5/1999	0	0.60 *U*		5.0		565		1.1 *U*
RSW20	river	RSW20	10/7/1999	0	0.60		5.6		784		1.1 *U*
RSW23	river	RSW23	10/7/1999	0	0.60		6.6		804		1.1 *U*
RSW24	river	RSW24	12/10/1999	0	1.0		5.6		637		1.1 *U*
SW24	river	SW24-RR	10/30/1997	0		2.1		107 *J*		1,080	
SW25	river	SW25-RR	10/29/1997	0		3.5		249 *J*		4,190	
SW26	marsh	SW26-DSM	10/29/1997	A		2.3		75.0 *J*		22,200	
SW26	marsh	SW31-DSM	10/29/1997	B		1.9		163 *J*		23,700	
SW27	river	SW27-RR	10/30/1997	0		1.1 *U*		140 *J*		497	

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-14. Inorganic analyte results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	Lead (TCLMET NONE) (µg/L unfiltered)	Manganese (TALMET NONE) (µg/L unfiltered)	Manganese (TCLMET NONE) (µg/L unfiltered)	Mercury (TALMET NONE) (µg/L unfiltered)	Mercury (TCLMET NONE) (µg/L unfiltered)	Nickel (TALMET NONE) (µg/L unfiltered)	Nickel (TCLMET NONE) (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0		60.6		0.10 *U*		2.3	
RSW02	Rriver	RSW02	10/8/1999	0		109		0.10 *U*		3.2	
RSW03	river	RSW03	12/16/1999	0		60.1		0.10 *U*		2.2	
RSW04	river	RSW04	10/8/1999	0		78.6		0.10 *U*		2.0	
RSW05	river	RSW05	12/16/1999	0		55.6		0.10 *U*		1.8	
RSW06	river	RSW06	12/16/1999	0		56.6		0.10 *U*		2.0	
RSW07	river	RSW07	10/8/1999	0		86.4		0.10 *U*		2.7	
RSW08	river	RSW08	10/8/1999	0		79.4		0.10 *U*		1.6	
RSW09	river	RSW09	10/7/1999	0		86.2		0.10 *U*		2.6	
RSW10	river	RSW10	10/7/1999	0		83.8		0.10 *U*		2.2	
RSW11	river	RSW11	10/6/1999	0		97.6		0.10 *U*		3.1	
RSW12	river	RSW12	10/8/1999	0		76.0		0.10 *U*		3.0	
RSW13	river	RSW13	10/6/1999	0		94.8		0.10 *U*		2.6	
RSW14	river	RSW14	10/7/1999	0		85.8		0.10 *U*		2.6	
RSW15	river	RSW15	10/6/1999	0		105		0.10 *U*		3.8	
RSW16	river	RSW16	10/6/1999	0		155		0.10 *U*		4.2	
RSW17	river	RSW17	10/6/1999	0		342		0.10 *U*		10.2	
RSW18	Rriver	RSW18	10/5/1999	0		94.2		0.10 *U*		1.9	
RSW19	Rriver	RSW19	10/5/1999	0		91.0		0.10 *U*		2.1	
RSW20	river	RSW20	10/7/1999	0		82.0		0.10 *U*		2.4	
RSW23	river	RSW23	10/7/1999	0		86.8		0.10 *U*		2.7	
RSW24	river	RSW24	12/10/1999	0		65.9		0.10 *U*		2.6	
SW24	river	SW24-RR	10/30/1997	0	5.2		92.3 *J*		0 *UR*		4.9
SW25	river	SW25-RR	10/29/1997	0	26.4 *J*		101 *J*		0.45 *J*		11.1
SW26	marsh	SW26-DSM	10/29/1997	A	16.1		1,150 *J*		0.86 *J*		7.1
SW26	marsh	SW31-DSM	10/29/1997	B	20.8 *J*		1,190 *J*		0.86 *J*		9.1
SW27	river	SW27-RR	10/30/1997	0	2.6		68.4 *J*		0 *UR*		4.5

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-14. Inorganic analyte results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	Selenium (TALMET NONE) (µg/L unfiltered)	Selenium (TCLMET NONE) (µg/L unfiltered)	Silver (TALMET NONE) (µg/L unfiltered)	Silver (TCLMET NONE) (µg/L unfiltered)	Thallium (TALMET NONE) (µg/L unfiltered)	Thallium (TCLMET NONE) (µg/L unfiltered)	Vanadium (TALMET NONE) (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0	1.8 *U*		0.40		2.1 *U*		2.2
RSW02	Rriver	RSW02	10/8/1999	0	1.8 *U*		0.40 *U*		2.1 *U*		1.9
RSW03	river	RSW03	12/16/1999	0	1.8 *U*		0.80		2.7		2.4
RSW04	river	RSW04	10/8/1999	0	1.8 *U*		0.40 *U*		2.1 *U*		2.2
RSW05	river	RSW05	12/16/1999	0	1.8 *U*		0.40 *U*		2.1 *U*		2.0
RSW06	river	RSW06	12/16/1999	0	1.8 *U*		0.40 *U*		3.2		2.4
RSW07	river	RSW07	10/8/1999	0	1.8 *U*		0.40 *U*		2.1 *U*		2.3
RSW08	river	RSW08	10/8/1999	0	1.8 *U*		0.40 *U*		2.1 *U*		1.6
RSW09	river	RSW09	10/7/1999	0	1.8 *U*		0.40 *U*		2.1 *U*		2.7
RSW10	river	RSW10	10/7/1999	0	1.8 *U*		0.40 *U*		2.1 *U*		2.2
RSW11	river	RSW11	10/6/1999	0	1.8 *U*		0.40 *U*		2.1 *U*		2.6
RSW12	river	RSW12	10/8/1999	0	1.8 *U*		0.40 *U*		2.1 *U*		2.2
RSW13	river	RSW13	10/6/1999	0	1.8 *U*		0.40 *U*		2.1 *U*		2.2
RSW14	river	RSW14	10/7/1999	0	1.8 *U*		0.40 *U*		2.1 *U*		2.2
RSW15	river	RSW15	10/6/1999	0	1.8 *U*		0.40 *U*		2.1 *U*		4.6
RSW16	river	RSW16	10/6/1999	0	1.8 *U*		0.40 *U*		2.1 *U*		1.4
RSW17	river	RSW17	10/6/1999	0	1.8 *U*		0.40 *U*		2.1 *U*		1.8
RSW18	Rriver	RSW18	10/5/1999	0	1.8 *U*		0.40 *U*		2.1 *U*		1.8
RSW19	Rriver	RSW19	10/5/1999	0	1.8 *U*		0.40 *U*		2.1 *U*		1.3
RSW20	river	RSW20	10/7/1999	0	1.8 *U*		0.40 *U*		2.1 *U*		2.1
RSW23	river	RSW23	10/7/1999	0	1.8 *U*		0.40 *U*		2.1 *U*		2.3
RSW24	river	RSW24	12/10/1999	0	1.8 *U*		0.80		2.1 *U*		2.4
SW24	river	SW24-RR	10/30/1997	0		2.3 *U*		0.80 *U*		2.9 *U*	
SW25	river	SW25-RR	10/29/1997	0		2.3 *U*		1.7		5.0	
SW26	marsh	SW26-DSM	10/29/1997	A		2.3 *U*		0.80 *U*		2.9 *U*	
SW26	marsh	SW31-DSM	10/29/1997	B		2.3 *U*		1.3		2.9 *U*	
SW27	river	SW27-RR	10/30/1997	0		2.3 *U*		0.80 *U*		2.9 *U*	

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-14. Inorganic analyte results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	Vanadium (TCLMET NONE) (µg/L unfiltered)	Zinc (TALMET NONE) (µg/L unfiltered)	Zinc (TCLMET NONE) (µg/L unfiltered)	Cyanide (TALMET NONE) (µg/L unfiltered)	Cyanide (TCLMET NONE) (µg/L unfiltered)	Calcium (TALMET NONE) (µg/L unfiltered)	Calcium (TCLMET NONE) (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0		12.9 *U*		4.0		133,000	
RSW02	Rriver	RSW02	10/8/1999	0		24.8		3.2		150,000	
RSW03	river	RSW03	12/16/1999	0		12.9 *U*		2.4		116,000	
RSW04	river	RSW04	10/8/1999	0		12.9 *U*		2.6		115,000	
RSW05	river	RSW05	12/16/1999	0		12.9 *U*		2.0		145,000	
RSW06	river	RSW06	12/16/1999	0		12.9 *U*		1.0 *U*		150,000	
RSW07	river	RSW07	10/8/1999	0		12.9 *U*		2.6		117,000	
RSW08	river	RSW08	10/8/1999	0		12.9 *U*		4.4		143,000	
RSW09	river	RSW09	10/7/1999	0		12.9 *U*		2.4		113,000	
RSW10	river	RSW10	10/7/1999	0		12.9 *U*		2.3		114,000	
RSW11	river	RSW11	10/6/1999	0		14.4		2.8		118,000	
RSW12	river	RSW12	10/8/1999	0		12.9 *U*		5.7		140,000	
RSW13	river	RSW13	10/6/1999	0		12.9 *U*				135,000	
RSW14	river	RSW14	10/7/1999	0		12.9 *U*		3.0		134,000	
RSW15	river	RSW15	10/6/1999	0		31.0		2.6		107,000	
RSW16	river	RSW16	10/6/1999	0		16.6				116,000	
RSW17	river	RSW17	10/6/1999	0		51.2				109,000	
RSW18	Rriver	RSW18	10/5/1999	0		12.9 *U*		5.6		123,000	
RSW19	Rriver	RSW19	10/5/1999	0		12.9 *U*		4.0		110,000	
RSW20	river	RSW20	10/7/1999	0		12.9 *U*		4.1		94,500	
RSW23	river	RSW23	10/7/1999	0		12.9 *U*		3.2		102,000	
RSW24	river	RSW24	12/10/1999	0		12.9 *U*		1.7		142,000	
SW24	river	SW24-RR	10/30/1997	0	2.8		37.4 *J*		9.0		155,000
SW25	river	SW25-RR	10/29/1997	0	18.6		69.5 *J*		3.6		155,000
SW26	marsh	SW26-DSM	10/29/1997	A	10.0		64.8 *J*		1.8		237,000
SW26	marsh	SW31-DSM	10/29/1997	B	11.1		72.0 *J*		2.5		243,000
SW27	river	SW27-RR	10/30/1997	0	1.7		49.7 *J*		5.2		187,000

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-14. Inorganic analyte results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	Magnesium (TALMET NONE) (µg/L unfiltered)	Magnesium (TCLMET NONE) (µg/L unfiltered)	Potassium (TALMET NONE) (µg/L unfiltered)	Potassium (TCLMET NONE) (µg/L unfiltered)	Sodium (TALMET NONE) (µg/L unfiltered)	Sodium (TCLMET NONE) (µg/L unfiltered)
RSW01	Rriver	RSW01	12/10/1999	0	419,000		158,000		3,420,000	
RSW02	Rriver	RSW02	10/8/1999	0	479,000		188,000		4,220,000	
RSW03	river	RSW03	12/16/1999	0	355,000		137,000		2,920,000	
RSW04	river	RSW04	10/8/1999	0	359,000		148,000		3,380,000	
RSW05	river	RSW05	12/16/1999	0	463,000		173,000		3,860,000	
RSW06	river	RSW06	12/16/1999	0	480,000		178,000		3,910,000	
RSW07	river	RSW07	10/8/1999	0	369,000		156,000		3,570,000	
RSW08	river	RSW08	10/8/1999	0	460,000		182,000		3,700,000	
RSW09	river	RSW09	10/7/1999	0	341,000		140,000		3,080,000	
RSW10	river	RSW10	10/7/1999	0	348,000		144,000		3,320,000	
RSW11	river	RSW11	10/6/1999	0	355,000		146,000		3,190,000	
RSW12	river	RSW12	10/8/1999	0	443,000		180,000		4,100,000	
RSW13	river	RSW13	10/6/1999	0	421,000		174,000		4,020,000	
RSW14	river	RSW14	10/7/1999	0	420,000		170,000		4,070,000	
RSW15	river	RSW15	10/6/1999	0	318,000		132,000		3,080,000	
RSW16	river	RSW16	10/6/1999	0	338,000		141,000		2,950,000	
RSW17	river	RSW17	10/6/1999	0	289,000		120,000		2,430,000	
RSW18	Rriver	RSW18	10/5/1999	0	379,000		156,000		3,470,000	
RSW19	Rriver	RSW19	10/5/1999	0	330,000		137,000		3,000,000	
RSW20	river	RSW20	10/7/1999	0	279,000		117,000		2,520,000	
RSW23	river	RSW23	10/7/1999	0	301,000		126,000		2,680,000	
RSW24	river	RSW24	12/10/1999	0	445,000		167,000		3,570,000	
SW24	river	SW24-RR	10/30/1997	0		496,000		172,000		3,710,000
SW25	river	SW25-RR	10/29/1997	0		508,000		184,000		4,010,000
SW26	marsh	SW26-DSM	10/29/1997	A		497,000		164,000		3,840,000
SW26	marsh	SW31-DSM	10/29/1997	B		513,000		171,000		3,970,000
SW27	river	SW27-RR	10/30/1997	0		639,000		222,000		4,950,000

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-15. Conventional parameter results for surface water samples

Station	Zone	Sample Number	Date	Field Replicate	Total Alkalinity (mg/L unfiltered)	Hardness (mg/L unfiltered)	Mass of Solids (see measurement basis) (mg/L dissolved)
SW24	river	SW24-RR	10/30/1997	0	67	2,600	13,000
SW25	river	SW25-RR	10/29/1997	0	79	2,900	12,000 *J*
SW26	marsh	SW26-DSM	10/29/1997	A	177	3,200	12,000 *J*
SW26	marsh	SW31-DSM	10/29/1997	B	174	2,900	12,000 *J*
SW27	river	SW27-RR	10/30/1997	0	80	3,500	16,000

Note: *J* - estimated

Table E-16. Volatile organic compound results for tissue–fish samples

Station	Zone	Sample Number	Date	Field Replicate	1,1,1-Trichloroethane (µg/kg wet)	1,1,2,2-Tetrachloro-ethane (µg/kg wet)	1,1,2-Trichloroethane (µg/kg wet)	1,1-Dichloroethane (µg/kg wet)	1,1-Dichloroethene (µg/kg wet)	1,2,4-Trichloro-benzene (µg/kg wet)	1,2-Dichloro-benzene (µg/kg wet)
RF04	river	RF04	10/13/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	1,600 *U*	1,600 *U*
RF05	river	RF05	10/13/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	1,600 *U*	1,600 *U*
RF07	river	RF07	9/24/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	8,200 *U*	8,200 *U*
RF10	river	RF10	9/24/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	1,600 *U*	1,600 *U*
RF11	river	RF11	10/13/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	1,600 *U*	1,600 *U*
RF13	river	RF13	10/13/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	1,600 *U*	1,600 *U*
RF14	river	RF14	10/13/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	1,600 *U*	1,600 *U*
RF15	river	RF15	9/24/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	1,600 *U*	1,600 *U*
RF19	Rriver	RF19	10/13/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	3,300 *U*	3,300 *U*
RFCOMP1	river	RFCOMP1	9/24/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	1,600 *U*	1,600 *U*

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-16. Volatile organic compound results for tissue–fish samples

Station	Zone	Sample Number	Date	Field Replicate	1,2-Dichloroethane (µg/kg wet)	1,2-Dichloro-propane (µg/kg wet)	1,3-Dichloro-benzene (µg/kg wet)	1,4-Dichloro-benzene (µg/kg wet)	2-Butanone (µg/kg wet)	2-Hexanone (µg/kg wet)	4-Methyl-2-pentanone (µg/kg wet)
RF04	river	RF04	10/13/1999	0	10 *U*	10 *U*	1,600 *U*	1,600 *U*	26 *U*	10 *U*	10 *U*
RF05	river	RF05	10/13/1999	0	10 *U*	10 *U*	1,600 *U*	1,600 *U*	6.0 *J*	10 *U*	10 *U*
RF07	river	RF07	9/24/1999	0	10 *U*	10 *U*	8,200 *U*	8,200 *U*	10 *U*	10 *U*	10 *U*
RF10	river	RF10	9/24/1999	0	10 *U*	10 *U*	1,600 *U*	1,600 *U*	5.0 *J*	10 *U*	10 *U*
RF11	river	RF11	10/13/1999	0	10 *U*	10 *U*	1,600 *U*	1,600 *U*	37	10 *U*	10 *U*
RF13	river	RF13	10/13/1999	0	10 *U*	10 *U*	1,600 *U*	1,600 *U*	8.0 *J*	10 *U*	10 *U*
RF14	river	RF14	10/13/1999	0	10 *U*	10 *U*	1,600 *U*	1,600 *U*	16	10 *U*	10 *U*
RF15	river	RF15	9/24/1999	0	10 *U*	10 *U*	1,600 *U*	1,600 *U*	2.0 *J*	10 *U*	10 *U*
RF19	Rriver	RF19	10/13/1999	0	10 *U*	10 *U*	3,300 *U*	3,300 *U*	10 *U*	10 *U*	10 *U*
RFCOMP1	river	RFCOMP1	9/24/1999	0	10 *U*	10 *U*	1,600 *U*	1,600 *U*	5.0 *J*	10 *U*	10 *U*

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-16. Volatile organic compound results for tissue–fish samples

Station	Zone	Sample Number	Date	Field Replicate	Acetone (µg/kg wet)	Benzene (µg/kg wet)	Bromodichloro-methane (µg/kg wet)	Bromomethane (µg/kg wet)	Carbon disulfide (µg/kg wet)	Carbon tetrachloride (µg/kg wet)	Chlorobenzene (µg/kg wet)
RF04	river	RF04	10/13/1999	0	440 *J*	10 *U*	10 *U*	10 *U*	1.0 *J*	10 *U*	10 *U*
RF05	river	RF05	10/13/1999	0	93 *U*	10 *U*	10 *U*	10 *U*	5.0 *J*	10 *U*	10 *U*
RF07	river	RF07	9/24/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RF10	river	RF10	9/24/1999	0	120 *U*	10 *U*	10 *U*	10 *U*	4.0 *J*	10 *U*	10 *U*
RF11	river	RF11	10/13/1999	0	180	10 *U*	10 *U*	10 *U*	15	10 *U*	10 *U*
RF13	river	RF13	10/13/1999	0	160	10 *U*	10 *U*	10 *U*	6.0 *J*	10 *U*	10 *U*
RF14	river	RF14	10/13/1999	0	250 *J*	10 *U*	10 *U*	10 *U*	4.0 *J*	10 *U*	10 *U*
RF15	river	RF15	9/24/1999	0	83	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RF19	Rriver	RF19	10/13/1999	0	80	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RFCOMP1	river	RFCOMP1	9/24/1999	0	160	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-16. Volatile organic compound results for tissue–fish samples

Station	Zone	Sample Number	Date	Field Replicate	Chloroethane (µg/kg wet)	Chloroform (µg/kg wet)	Chloromethane (µg/kg wet)	cis-1,3-Dichloro-propene (µg/kg wet)	Methylene chloride (µg/kg wet)	Ethylbenzene (µg/kg wet)	Styrene (µg/kg wet)
RF04	river	RF04	10/13/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	3.0 *J*	10 *U*	10 *U*
RF05	river	RF05	10/13/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	2.0 *J*	10 *U*	10 *U*
RF07	river	RF07	9/24/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	150 *U*	10 *U*	10 *U*
RF10	river	RF10	9/24/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RF11	river	RF11	10/13/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	3.0 *J*	10 *U*	10 *U*
RF13	river	RF13	10/13/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	2.0 *J*	10 *U*	10 *U*
RF14	river	RF14	10/13/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	2.0 *J*	10 *U*	10 *U*
RF15	river	RF15	9/24/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RF19	Rriver	RF19	10/13/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RFCOMP1	river	RFCOMP1	9/24/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-16. Volatile organic compound results for tissue–fish samples

Station	Zone	Sample Number	Date	Field Replicate	Tetrachloro-ethene (µg/kg wet)	Toluene (µg/kg wet)	trans-1,3-Dichloro-propene (µg/kg wet)	Bromoform (µg/kg wet)	Trichloroethene (µg/kg wet)	Vinyl chloride (µg/kg wet)	Xylene isomers (total) (µg/kg wet)
RF04	river	RF04	10/13/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RF05	river	RF05	10/13/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RF07	river	RF07	9/24/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RF10	river	RF10	9/24/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RF11	river	RF11	10/13/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RF13	river	RF13	10/13/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RF14	river	RF14	10/13/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RF15	river	RF15	9/24/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*
RF19	Rriver	RF19	10/13/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	2.0 *J*
RFCOMP1	river	RFCOMP1	9/24/1999	0	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*	10 *U*

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-17. Semivolatile organic compound results for tissue–fish samples

Station	Zone	Sample Number	Date	Field Replicate	2,4,5-Trichlorophenol (µg/kg wet)	2,4,6-Trichlorophenol (µg/kg wet)	2,4-Dichlorophenol (µg/kg wet)	2,4-Dimethylphenol (µg/kg wet)	2,4-Dinitrophenol (µg/kg wet)	2,4-Dinitrotoluene (µg/kg wet)	2,6-Dinitrotoluene (µg/kg wet)
RF04	river	RF04	10/13/1999	0	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	4,000 *UJ*	1,600 *U*	1,600 *U*
RF05	river	RF05	10/13/1999	0	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	4,000 *UJ*	1,600 *U*	1,600 *U*
RF07	river	RF07	9/24/1999	0	20,000 *U*	8,200 *U*	8,200 *U*	8,200 *U*	20,000 *UJ*	8,200 *U*	8,200 *U*
RF10	river	RF10	9/24/1999	0	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	4,000 *UJ*	1,600 *U*	1,600 *U*
RF11	river	RF11	10/13/1999	0	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	4,000 *UJ*	1,600 *U*	1,600 *U*
RF13	river	RF13	10/13/1999	0	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	4,000 *UJ*	1,600 *U*	1,600 *U*
RF14	river	RF14	10/13/1999	0	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	4,000 *UJ*	1,600 *U*	1,600 *U*
RF15	river	RF15	9/24/1999	0	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	4,000 *UJ*	1,600 *U*	1,600 *U*
RF19	Rriver	RF19	10/13/1999	0	8,000 *U*	3,300 *U*	3,300 *U*	3,300 *U*	8,000 *U*	3,300 *U*	3,300 *U*
RFCOMP1	river	RFCOMP1	9/24/1999	0	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	4,000 *UJ*	1,600 *U*	1,600 *U*

Note:
PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-17. Semivolatile organic compound results for tissue–fish samples

Station	Zone	Sample Number	Date	Field Replicate	2-Chloro-naphthalene (µg/kg wet)	2-Chlorophenol (µg/kg wet)	2-Methyl-4,6-dinitrophenol (µg/kg wet)	2-Methyl-naphthalene (µg/kg wet)	2-Methylphenol (µg/kg wet)	2-Nitroaniline (µg/kg wet)	2-Nitrophenol (µg/kg wet)
RF04	river	RF04	10/13/1999	0	1,600 *U*	1,600 *U*	4,000 *U*	1,600 *U*	1,600 *U*	0 *R*	1,600 *U*
RF05	river	RF05	10/13/1999	0	1,600 *U*	1,600 *U*	4,000 *U*	1,600 *U*	1,600 *U*	0 *R*	1,600 *U*
RF07	river	RF07	9/24/1999	0	8,200 *U*	8,200 *U*	20,000 *U*	8,200 *U*	8,200 *U*	20,000 *U*	8,200 *U*
RF10	river	RF10	9/24/1999	0	1,600 *U*	1,600 *U*	4,000 *U*	1,600 *U*	1,600 *U*	4,000 *U*	1,600 *U*
RF11	river	RF11	10/13/1999	0	1,600 *U*	1,600 *U*	4,000 *U*	1,600 *U*	1,600 *U*	0 *R*	1,600 *U*
RF13	river	RF13	10/13/1999	0	1,600 *U*	1,600 *U*	4,000 *U*	1,600 *U*	1,600 *U*	0 *R*	1,600 *U*
RF14	river	RF14	10/13/1999	0	1,600 *U*	1,600 *U*	4,000 *U*	1,600 *U*	1,600 *UJ*	0 *R*	1,600 *U*
RF15	river	RF15	9/24/1999	0	1,600 *U*	1,600 *U*	4,000 *U*	1,600 *U*	1,600 *U*	4,000 *U*	1,600 *U*
RF19	Rriver	RF19	10/13/1999	0	3,300 *U*	3,300 *U*	8,000 *U*	3,300 *U*	3,300 *U*	8,000 *U*	3,300 *U*
RFCOMP1	river	RFCOMP1	9/24/1999	0	1,600 *U*	1,600 *U*	4,000 *U*	1,600 *U*	1,600 *U*	4,000 *U*	1,600 *U*

Note: PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-17. Semivolatile organic compound results for tissue–fish samples

Station	Zone	Sample Number	Date	Field Replicate	3,3'-Dichloro-benzidine (µg/kg wet)	3-Nitroaniline (µg/kg wet)	4-Bromophenyl-phenyl ether (µg/kg wet)	4-Chloro-3-methylphenol (µg/kg wet)	4-Chloroaniline (µg/kg wet)	4-Chlorophenyl-phenyl ether (µg/kg wet)	4-Methylphenol (µg/kg wet)
RF04	river	RF04	10/13/1999	0	1,600 *U*	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*
RF05	river	RF05	10/13/1999	0	1,600 *U*	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*
RF07	river	RF07	9/24/1999	0	8,200 *U*	20,000 *U*	8,200 *U*	8,200 *U*	8,200 *U*	8,200 *U*	8,200 *U*
RF10	river	RF10	9/24/1999	0	1,600 *U*	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*
RF11	river	RF11	10/13/1999	0	1,600 *U*	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*
RF13	river	RF13	10/13/1999	0	1,600 *UJ*	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *UJ*
RF14	river	RF14	10/13/1999	0	1,600 *U*	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *UJ*
RF15	river	RF15	9/24/1999	0	1,600 *U*	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*
RF19	Rriver	RF19	10/13/1999	0	3,300 *U*	8,000 *U*	3,300 *U*	3,300 *U*	3,300 *U*	3,300 *U*	3,300 *U*
RFCOMP1	river	RFCOMP1	9/24/1999	0	1,600 *U*	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*

Note:
PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-17. Semivolatile organic compound results for tissue–fish samples

Station	Zone	Sample Number	Date	Field Replicate	4-Nitroaniline (µg/kg wet)	4-Nitrophenol (µg/kg wet)	Acenaphthene (µg/kg wet)	Acenaph-thylene (µg/kg wet)	Anthracene (µg/kg wet)	Benz[a]-anthracene (µg/kg wet)	Benzo[a]pyrene (µg/kg wet)
RF04	river	RF04	10/13/1999	0	4,000 *U*	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *UJ*
RF05	river	RF05	10/13/1999	0	4,000 *U*	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *UJ*
RF07	river	RF07	9/24/1999	0	20,000 *U*	20,000 *U*	8,200 *U*	8,200 *U*	8,200 *U*	8,200 *U*	8,200 *U*
RF10	river	RF10	9/24/1999	0	4,000 *U*	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*
RF11	river	RF11	10/13/1999	0	4,000 *U*	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *UJ*
RF13	river	RF13	10/13/1999	0	4,000 *U*	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *UJ*
RF14	river	RF14	10/13/1999	0	4,000 *U*	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *UJ*
RF15	river	RF15	9/24/1999	0	4,000 *U*	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*
RF19	Rriver	RF19	10/13/1999	0	8,000 *U*	3,300 *U*	8,000 *U*	3,300 *U*	3,300 *U*	3,300 *U*	3,300 *U*
RFCOMP1	river	RFCOMP1	9/24/1999	0	4,000 *U*	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*

Note: PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-17. Semivolatile organic compound results for tissue–fish samples

Station	Zone	Sample Number	Date	Field Replicate	Benzo[b]-fluoranthene (µg/kg wet)	Benzo[ghi]-perylene (µg/kg wet)	Benzo[k]-fluoranthene (µg/kg wet)	bis[2-chloroethoxy]-methane (µg/kg wet)	bis[2-chloroethyl] ether (µg/kg wet)	Bis[2-chloroisopropyl] ether (µg/kg wet)	bis[2-Ethylhexyl]-phthalate (µg/kg wet)
RF04	river	RF04	10/13/1999	0	1,600 *UJ*	0 *R*	1,600 *UJ*	1,600 *U*	1,600 *U*	1,600 *UJ*	1,600 *UJ*
RF05	river	RF05	10/13/1999	0	1,600 *UJ*	0 *R*	1,600 *UJ*	1,600 *U*	1,600 *U*	1,600 *UJ*	1,600 *UJ*
RF07	river	RF07	9/24/1999	0	8,200 *U*	0 *R*	8,200 *U*	8,200 *U*	8,200 *U*	8,200 *U*	8,200 *UJ*
RF10	river	RF10	9/24/1999	0	1,600 *U*	0 *R*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *UJ*
RF11	river	RF11	10/13/1999	0	1,600 *UJ*	0 *R*	1,600 *UJ*	1,600 *U*	1,600 *U*	1,600 *UJ*	1,600 *UJ*
RF13	river	RF13	10/13/1999	0	1,600 *UJ*	0 *R*	1,600 *UJ*	1,600 *U*	1,600 *U*	1,600 *UJ*	1,600 *U*
RF14	river	RF14	10/13/1999	0	1,600 *UJ*	0 *R*	1,600 *UJ*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *UJ*
RF15	river	RF15	9/24/1999	0	1,600 *U*	0 *R*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *UJ*
RF19	Rriver	RF19	10/13/1999	0	3,300 *U*	3,300 *U*	3,300 *U*	3,300 *U*	3,300 *U*	3,300 *U*	3,300 *U*
RFCOMP1	river	RFCOMP1	9/24/1999	0	1,600 *U*	0 *R*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *UJ*

Note: PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-17. Semivolatile organic compound results for tissue–fish samples

Station	Zone	Sample Number	Date	Field Replicate	Butylbenzyl phthalate (µg/kg wet)	Carbazole (µg/kg wet)	Chrysene (µg/kg wet)	Dibenz[a,h]-anthracene (µg/kg wet)	Dibenzofuran (µg/kg wet)	Diethyl phthalate (µg/kg wet)	Dimethyl phthalate (µg/kg wet)
RF04	river	RF04	10/13/1999	0	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *UJ*	1,600 *U*	1,600 *U*	1,600 *U*
RF05	river	RF05	10/13/1999	0	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *UJ*	1,600 *U*	1,600 *U*	1,600 *U*
RF07	river	RF07	9/24/1999	0	8,200 *UJ*	8,200 *U*	8,200 *U*	0 *R*	8,200 *U*	8,200 *U*	8,200 *U*
RF10	river	RF10	9/24/1999	0	1,600 *UJ*	1,600 *U*	1,600 *U*	0 *R*	1,600 *U*	1,600 *U*	1,600 *U*
RF11	river	RF11	10/13/1999	0	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *UJ*	1,600 *U*	1,600 *U*	1,600 *U*
RF13	river	RF13	10/13/1999	0	1,600 *U*	1,600 *U*	420 *J*	1,600 *UJ*	1,600 *U*	1,600 *U*	1,600 *U*
RF14	river	RF14	10/13/1999	0	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *UJ*	1,600 *U*	1,600 *U*	1,600 *U*
RF15	river	RF15	9/24/1999	0	1,600 *UJ*	1,600 *U*	1,600 *U*	0 *R*	1,600 *U*	1,600 *U*	1,600 *U*
RF19	Rriver	RF19	10/13/1999	0	3,300 *U*	3,300 *U*	3,300 *U*	3,300 *U*	3,300 *U*	3,300 *U*	3,300 *U*
RFCOMP1	river	RFCOMP1	9/24/1999	0	1,600 *UJ*	1,600 *U*	1,600 *U*	0 *R*	1,600 *U*	1,600 *U*	1,600 *U*

Note:
PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-17. Semivolatile organic compound results for tissue–fish samples

Station	Zone	Sample Number	Date	Field Replicate	Di-n-butyl phthalate (µg/kg wet)	Di-n-octyl phthalate (µg/kg wet)	Fluoranthene (µg/kg wet)	Fluorene (µg/kg wet)	Hexachloro-benzene (µg/kg wet)	Hexachloro-butadiene (µg/kg wet)	Hexachloro-cyclo-pentadiene (µg/kg wet)
RF04	river	RF04	10/13/1999	0	1,600 *U*	1,600 *UJ*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*
RF05	river	RF05	10/13/1999	0	740 *J*	1,600 *UJ*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*
RF07	river	RF07	9/24/1999	0	8,200 *U*	8,200 *U*	8,200 *U*	8,200 *U*	8,200 *U*	8,200 *U*	8,200 *U*
RF10	river	RF10	9/24/1999	0	1,600 *U*	1,600 *UJ*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*
RF11	river	RF11	10/13/1999	0	1,600 *U*	1,600 *UJ*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*
RF13	river	RF13	10/13/1999	0	740 *J*	1,600 *UJ*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*
RF14	river	RF14	10/13/1999	0	1,600 *U*	1,600 *UJ*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*
RF15	river	RF15	9/24/1999	0	1,600 *U*	1,600 *UJ*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*
RF19	Rriver	RF19	10/13/1999	0	3,300 *U*	3,300 *U*	3,300 *U*	3,300 *U*	3,300 *U*	3,300 *U*	3,300 *U*
RFCOMP1	river	RFCOMP1	9/24/1999	0	1,600 *U*	1,600 *UJ*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*

Note: PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-17. Semivolatile organic compound results for tissue–fish samples

Station	Zone	Sample Number	Date	Field Replicate	Hexachloro-ethane (µg/kg wet)	Indeno[1,2,3-cd]pyrene (µg/kg wet)	Isophorone (µg/kg wet)	Naphthalene (µg/kg wet)	Nitrobenzene (µg/kg wet)	N-nitroso-di-n-propylamine (µg/kg wet)	N-nitroso-diphenylamine (µg/kg wet)
RF04	river	RF04	10/13/1999	0	1,600 *U*	1,600 *UJ*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *UJ*	1,600 *U*
RF05	river	RF05	10/13/1999	0	1,600 *U*	1,600 *UJ*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *UJ*	1,600 *U*
RF07	river	RF07	9/24/1999	0	8,200 *U*	8,200 *UJ*	8,200 *U*	8,200 *U*	8,200 *U*	8,200 *UJ*	8,200 *U*
RF10	river	RF10	9/24/1999	0	1,600 *UJ*	1,600 *UJ*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*
RF11	river	RF11	10/13/1999	0	1,600 *U*	1,600 *UJ*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *UJ*	1,600 *U*
RF13	river	RF13	10/13/1999	0	1,600 *U*	0 *R*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*
RF14	river	RF14	10/13/1999	0	1,600 *U*	1,600 *UJ*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*
RF15	river	RF15	9/24/1999	0	1,600 *U*	1,600 *UJ*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *U*
RF19	Rriver	RF19	10/13/1999	0	3,300 *U*	3,300 *U*	3,300 *U*	3,300 *U*	3,300 *U*	3,300 *U*	3,300 *U*
RFCOMP1	river	RFCOMP1	9/24/1999	0	1,600 *U*	1,600 *UJ*	1,600 *U*	1,600 *U*	1,600 *U*	1,600 *UJ*	1,600 *U*

Note: PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-17. Semivolatile organic compound results for tissue–fish samples

Station	Zone	Sample Number	Date	Field Replicate	Pentachloro-phenol (µg/kg wet)	Phenanthrene (µg/kg wet)	Phenol (µg/kg wet)	Pyrene (µg/kg wet)	Total PAHs (µg/kg wet)
RF04	river	RF04	10/13/1999	0	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	10,000 *RJ*
RF05	river	RF05	10/13/1999	0	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	10,000 *RJ*
RF07	river	RF07	9/24/1999	0	20,000 *U*	8,200 *U*	8,200 *U*	8,200 *U*	60,000 *RJ*
RF10	river	RF10	9/24/1999	0	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	10,000 *RJ*
RF11	river	RF11	10/13/1999	0	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	10,000 *RJ*
RF13	river	RF13	10/13/1999	0	4,000 *UJ*	1,600 *U*	1,600 *U*	1,600 *U*	10,000 *RJ*
RF14	river	RF14	10/13/1999	0	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	10,000 *RJ*
RF15	river	RF15	9/24/1999	0	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	10,000 *RJ*
RF19	Rriver	RF19	10/13/1999	0	8,000 *U*	3,300 *U*	3,300 *U*	3,300 *U*	58,000 *U*
RFCOMP1	river	RFCOMP1	9/24/1999	0	4,000 *U*	1,600 *U*	1,600 *U*	1,600 *U*	10,000 *RJ*

Note: PAH - polycyclic aromatic hydrocarbon
Rriver - river reference zone
J - estimated
U - undetected at detection limit shown
R - rejected

Table E-18. Pesticide/PCB results for tissue–fish samples

Station	Zone	Sample Number	Date	Field Replicate	4,4'-DDD (µg/kg wet)	4,4'-DDE (µg/kg wet)	4,4'-DDT (µg/kg wet)	Aldrin (µg/kg wet)	alpha-Chlordane (µg/kg wet)	alpha-Endosulfan (µg/kg wet)	alpha-Hexachloro-cyclohexane (µg/kg wet)
RF04	river	RF04	10/13/1999	0	34 *J*	38 *J*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*
RF05	river	RF05	10/13/1999	0	35 *J*	45 *J*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*
RF07	river	RF07	9/24/1999	0	40 *J*	47 *J*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*
RF10	river	RF10	9/24/1999	0	60 *J*	66 *J*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*
RF11	river	RF11	10/13/1999	0	36 *J*	56 *J*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*
RF13	river	RF13	10/13/1999	0	38 *J*	46 *J*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*
RF14	river	RF14	10/13/1999	0	37 *J*	44 *J*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*
RF15	river	RF15	9/24/1999	0	47	58	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*
RF19	Rriver	RF19	10/13/1999	0	110	120	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*
RFCOMP1	river	RFCOMP1	9/24/1999	0	32 *J*	49 *J*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-18. Pesticide/PCB results for tissue–fish samples

Station	Zone	Sample Number	Date	Field Replicate	beta-Endosulfan (µg/kg wet)	beta-Hexachloro cyclohexane (µg/kg wet)	delta-Hexachloro-cyclohexane (µg/kg wet)	Dieldrin (µg/kg wet)	Endosulfan sulfate (µg/kg wet)	Endrin (µg/kg wet)	Endrin aldehyde (µg/kg wet)
RF04	river	RF04	10/13/1999	0	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*
RF05	river	RF05	10/13/1999	0	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*
RF07	river	RF07	9/24/1999	0	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*
RF10	river	RF10	9/24/1999	0	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*
RF11	river	RF11	10/13/1999	0	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*
RF13	river	RF13	10/13/1999	0	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*
RF14	river	RF14	10/13/1999	0	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*
RF15	river	RF15	9/24/1999	0	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*
RF19	Rriver	RF19	10/13/1999	0	5.0 *U*	5.0 *U*	5.0 *U*	9.7	5.0 *U*	5.0 *U*	5.0 *U*
RFCOMP1	river	RFCOMP1	9/24/1999	0	5.0 *U*	5.0 *U*	5.0 *U*	12 *J*	5.0 *U*	5.0 *U*	5.0 *U*

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-18. Pesticide/PCB results for tissue–fish samples

Station	Zone	Sample Number	Date	Field Replicate	Endrin ketone (µg/kg wet)	gamma-Chlordane (µg/kg wet)	gamma-Hexachloro-cyclohexane (µg/kg wet)	Heptachlor (µg/kg wet)	Heptachlor epoxide (µg/kg wet)	Methoxychlor (µg/kg wet)	Toxaphene (µg/kg wet)
RF04	river	RF04	10/13/1999	0	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	15 *J*	5.0 *U*	100 *U*
RF05	river	RF05	10/13/1999	0	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	15 *J*	5.0 *U*	100 *U*
RF07	river	RF07	9/24/1999	0	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	18 *J*	5.0 *U*	100 *U*
RF10	river	RF10	9/24/1999	0	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	17 *J*	5.0 *U*	100 *U*
RF11	river	RF11	10/13/1999	0	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	14 *J*	5.0 *U*	100 *U*
RF13	river	RF13	10/13/1999	0	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	14 *J*	5.0 *U*	100 *U*
RF14	river	RF14	10/13/1999	0	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	14 *J*	5.0 *U*	100 *U*
RF15	river	RF15	9/24/1999	0	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	14 *J*	5.0 *U*	100 *U*
RF19	Rriver	RF19	10/13/1999	0	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	21	5.0 *U*	100 *U*
RFCOMP1	river	RFCOMP1	9/24/1999	0	5.0 *U*	5.0 *U*	5.0 *U*	5.0 *U*	15 *J*	5.0 *U*	100 *U*

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-18. Pesticide/PCB results for tissue–fish samples

Station	Zone	Sample Number	Date	Field Replicate	Aroclor® 1016 (µg/kg wet)	Aroclor® 1221 (µg/kg wet)	Aroclor® 1232 (µg/kg wet)	Aroclor® 1242 (µg/kg wet)	Aroclor® 1248 (µg/kg wet)	Aroclor® 1254 (µg/kg wet)	Aroclor® 1260 (µg/kg wet)	Polychlorinated biphenyls (µg/kg wet)
RF04	river	RF04	10/13/1999	0	100 *U*	100 *U*	100 *U*	100 *U*	100 *U*	100 *U*	190 *J*	190 *J*
RF05	river	RF05	10/13/1999	0	100 *U*	100 *U*	100 *U*	100 *U*	100 *U*	100 *U*	220 *J*	220 *J*
RF07	river	RF07	9/24/1999	0	100 *U*	100 *U*	100 *U*	100 *U*	100 *U*	100 *U*	240 *J*	240 *J*
RF10	river	RF10	9/24/1999	0	100 *U*	100 *U*	100 *U*	100 *U*	100 *U*	100 *U*	320 *J*	320 *J*
RF11	river	RF11	10/13/1999	0	100 *U*	100 *U*	100 *U*	100 *U*	100 *U*	100 *U*	300 *J*	300 *J*
RF13	river	RF13	10/13/1999	0	100 *U*	100 *U*	100 *U*	100 *U*	100 *U*	100 *U*	280 *J*	280 *J*
RF14	river	RF14	10/13/1999	0	100 *U*	100 *U*	100 *U*	100 *U*	100 *U*	100 *U*	210 *J*	210 *J*
RF15	river	RF15	9/24/1999	0	100 *U*	100 *U*	100 *U*	100 *U*	100 *U*	100 *U*	280	280
RF19	Rriver	RF19	10/13/1999	0	100 *U*	100 *U*	100 *U*	100 *U*	100 *U*	100 *U*	400 *U*	400 *U*
RFCOMP1	river	RFCOMP1	9/24/1999	0	100 *U*	100 *U*	100 *U*	100 *U*	100 *U*	100 *U*	270 *J*	270 *J*

Note: Rriver - river reference zone
J - estimated
U - undetected at detection limit shown

Table E-19. Inorganic analyte results for tissue–fish samples

Station	Zone	Sample Number	Date	Field Replicate	Aluminum (mg/kg wet)	Antimony (mg/kg wet)	Arsenic (mg/kg wet)	Barium (mg/kg wet)	Beryllium (mg/kg wet)	Cadmium (mg/kg wet)	Chromium (mg/kg wet)
RF04	river	RF04	10/13/1999	0	0 *R*	0.070 *UJ*	0.42 *J*	0.37	0.030	0.020 *UJ*	0.26
RF05	river	RF05	10/13/1999	0	0 *R*	0.090 *J*	0.45 *J*	0.29 *J*	0.030 *J*	0.020 *UJ*	0.17
RF07	river	RF07	9/24/1999	0	0 *R*	0.060 *UJ*	0.57	2.4	0.020 *U*	0.020 *U*	0.37
RF10	river	RF10	9/24/1999	0	7.2	0.060 *U*	0.77 *J*	1.1	0.020 *U*	0.020 *U*	0.40
RF11	river	RF11	10/13/1999	0	0 *R*	0.16 *J*	0.35 *J*	1.0	0.040	0.020 *UJ*	0.26
RF13	river	RF13	10/13/1999	0	0 *R*	0.070 *UJ*	0.45 *J*	0.36	0.040	0.020 *UJ*	0.19
RF14	river	RF14	10/13/1999	0	0 *R*	0.11 *J*	0.64 *J*	0.38	0.050	0.020 *UJ*	0.18
RF15	river	RF15	9/24/1999	0	0 *R*	0 *R*	0.50 *J*	0.67	0.020 *U*	0.020 *U*	0.28
RF19	Rriver	RF19	10/13/1999	0	0 *R*	0.15 *J*	0.40 *J*	0.63	0.050	0.020 *UJ*	0.27
RFCOMP1	river	RFCOMP1	9/24/1999	0	0 *R*	0.23 *J*	0.77	1.5	0.020 *U*	0.030	0.93

Note:

Rriver - river reference zone
J - estimated
N - spike sample recovery not within control limits
U - undetected at detection limit shown
R - rejected

Table E-19. Inorganic analyte results for tissue–fish samples

Station	Zone	Sample Number	Date	Field Replicate	Cobalt (mg/kg wet)	Copper (mg/kg wet)	Iron (mg/kg wet)	Lead (mg/kg wet)	Manganese (mg/kg wet)	Mercury (mg/kg wet)	Nickel (mg/kg wet)
RF04	river	RF04	10/13/1999	0	0.030 *U*	3.6	42.7 *J*	0.25	0 *R*	0.030 *U*	0.050 *J*
RF05	river	RF05	10/13/1999	0	0.030 *U*	1.8	21.2 *J*	0.30	0 *R*	0.030 *U*	0.040 *UJ*
RF07	river	RF07	9/24/1999	0	0.030 *U*	0 *R*	0 *R*	0.83 *U*	6.8 *J*	0.030 *U*	0.080 *J*
RF10	river	RF10	9/24/1999	0	0.030 *U*	0 *R*	0 *R*	1.2	9.7 *J*	0.040	0.030 *U*
RF11	river	RF11	10/13/1999	0	0.030 *U*	0.97	11.7 *J*	0.040 *U*	0 *R*	0.030 *U*	0.040 *UJ*
RF13	river	RF13	10/13/1999	0	0.030 *U*	3.2	12.7 *J*	0.28	0 *R*	0.030 *U*	0.040 *UJ*
RF14	river	RF14	10/13/1999	0	0.030 *U*	4.2	40.8 *J*	0.56 *J*	0 *R*	0.030 *U*	0.050 *J*
RF15	river	RF15	9/24/1999	0	0.030 *U*	0 *R*	0 *R*	1.2	4.5 *J*	0.030 *U*	0.090 *J*
RF19	Rriver	RF19	10/13/1999	0	0.030 *U*	0.52	26.2 *J*	0.23	0 *R*	0.030 *U*	0.040 *UJ*
RFCOMP1	river	RFCOMP1	9/24/1999	0	0.11	0 *R*	0 *R*	0 *R*	6.3 *J*	0.030 *U*	0.41 *J*

Note: Rriver - river reference zone
J - estimated
N - spike sample recovery not within con
U - undetected at detection limit shown
R - rejected

Table E-19. Inorganic analyte results for tissue–fish samples

Station	Zone	Sample Number	Date	Field Replicate	Selenium (mg/kg wet)	Silver (mg/kg wet)	Thallium (mg/kg wet)	Vanadium (mg/kg wet)	Zinc (mg/kg wet)	Calcium (mg/kg wet)	Magnesium (mg/kg wet)
RF04	river	RF04	10/13/1999	0	0.63 *JN*	0.020 *UJN*	0.14 *UJN*	0.030 *U*	47.6 *JN*	5,790 *J*	293 *J*
RF05	river	RF05	10/13/1999	0	0.46 *JN*	0.020 *UJN*	0.13 *UJN*	0.030 *U*	37.2 *JN*	4,560 *J*	294 *J*
RF07	river	RF07	9/24/1999	0	0.96 *J*	0.020 *U*	0 *R*	0.35	45.9 *J*	16,500 *J*	571 *J*
RF10	river	RF10	9/24/1999	0	0.86 *J*	0.020	0 *R*	0.13	66.5 *J*	18,900 *J*	581 *J*
RF11	river	RF11	10/13/1999	0	0.68 *JN*	0.020 *UJN*	0.13 *UJN*	0.030 *U*	49.2 *JN*	10,400 *J*	388 *J*
RF13	river	RF13	10/13/1999	0	0.57 *JN*	0.020 *UJN*	0.13 *UJN*	0.080	45.7 *JN*	6,200 *J*	326 *J*
RF14	river	RF14	10/13/1999	0	0.53 *JN*	0.020 *UJN*	0.14 *UJN*	0.030 *U*	45.7 *JN*	3,120 *J*	392 *J*
RF15	river	RF15	9/24/1999	0	0.84 *J*	0.060	0 *R*	0.030	40.5 *J*	10,000 *J*	414 *J*
RF19	Rriver	RF19	10/13/1999	0	0.61 *JN*	0.020 *UJN*	0.13 *UJN*	0.030 *U*	51.4 *JN*	8,490 *J*	366 *JN*
RFCOMP1	river	RFCOMP1	9/24/1999	0	0.64 *J*	0.020 *U*	0 *R*	0.63	67.0 *J*	14,300 *J*	544 *J*

Note: Rriver - river reference zone
J - estimated
N - spike sample recovery not within con
U - undetected at detection limit shown
R - rejected

Table E-19. Inorganic analyte results for tissue–fish samples

Station	Zone	Sample Number	Date	Field Replicate	Potassium (mg/kg wet)	Sodium (mg/kg wet)
RF04	river	RF04	10/13/1999	0	2,210	1,470
RF05	river	RF05	10/13/1999	0	2,160	1,680
RF07	river	RF07	9/24/1999	0	2,260 *J*	1,360 *J*
RF10	river	RF10	9/24/1999	0	2,350 *J*	1,490 *J*
RF11	river	RF11	10/13/1999	0	2,390	1,470
RF13	river	RF13	10/13/1999	0	2,320	1,670
RF14	river	RF14	10/13/1999	0	1,610	2,140
RF15	river	RF15	9/24/1999	0	2,610 *J*	1,250 *J*
RF19	Rriver	RF19	10/13/1999	0	2,510	1,390
RFCOMP1	river	RFCOMP1	9/24/1999	0	2,550 *J*	1,250 *J*

Note: Rriver - river reference zone
J - estimated
N - spike sample recovery not within con
U - undetected at detection limit shown
R - rejected

Table E-20. Arsenic, mercury, and PCB results for soil samples

Survey Station	Location	Date	Sample ID	Upper Depth (in.)	Lower Depth (in.)	Arsenic (mg/kg dry)	Mercury (mg/kg dry)	Polychlorinated Biphenyls (µg/kg dry)
SB01A	BKG	12/8/1997	SB01A(0-1)	0	12	4.1	0.070 *U*	72 *U*
SB02A	BKG	12/2/1997	SB02A(0-1)	0	12	9.9 *JN*	0 *R*	87 *U*
SB03A	BKG	11/21/1997	SB03A(0-1)	0	12	13.5	0.13 *U*	85 *UJ*
SB04A	ADC	11/20/1997	SB04A(0-1)	0	12	1,090 *J*	0.20 *UJ*	37,000 *JN*
SB05A	HRD	12/1/1997	SB05A(0-1)	0	12	37.1 *JN*	0 *R*	1,300 *JN*
SB06A	BKG	12/4/1997	SB06A(0-1)	0	12	4.1 *J*	0.060	74 *UJ*
SB07A	BKG	12/2/1997	SB07A(0-1)	0	12	14.7 *JN*	0 *R*	120 *U*
SB08A	SPD	12/1/1997	SB08A(0-1)	0	12	20.9 *JN*	0 *R*	86 *U*
SB09A	ADC	12/5/1997	SB09A(0-1)	0	12	0 *R*	4.5	14,000 *J*
SB10A	ADC	12/4/1997	SB10A(0-1)	0	12	0 *R*	0 *R*	86 *UJ*
SB11A	ARC	12/2/1997	SB11A(0-1)	0	12	9.2	0.26	87 *U*
SB12A	HRD	11/21/1997	SB12A(0-1)	0	12	22.8	0.11 *U*	78 *UJ*
SB13A	HRD	12/9/1997	SB13A(0-1)	0	12	68.4 *J*	1.9	10,000 *JN*
SB14A	SPD	12/4/1997	SB14A(0-1)	0	12	0 *R*	0 *R*	74 *U*
SB15A	SPD	12/3/1997	SB15A(0-1)	0	12	8.8	0.10	86 *UJ*
SB16A	ADC	11/17/1997	SB16A(0-1)	0	12	48.9	7.4	9,500 *U*
SB17A	ADC	11/18/1997	SB17A(0-1)	0	12	3,640	6.2	4,200
SB18A	ADC	11/20/1997	SB18A(0-1)	0	12	24.0	2.2	530 *J*
SB19A	ADC	12/4/1997	SB19A(0-1)	0	12	55.0 *J*	1.7	31 *J*
SB20A	HRD	12/2/1997	SB20A(0-1)	0	12	22.1	1.9	610
SB21A	HRD	12/3/1997	SB21A(0-1)	0	12	19.1	1.6	1,000 *JN*
SB23A	SPD	12/8/1997	SB23A(0-1)	0	12	10.7	0.81	70 *J*
SB24A	SPD	12/5/1997	SB24A(0-1)	0	12	0 *R*	0.060 *U*	82 *U*
SB25A	SPD	11/13/1997	SB25A(0-1)	0	12	10.6	0.76	110 *UJ*
SB26A	ADC	11/14/1997	SB26A(0-1)	0	12	138	6.5	29,000 *J*
SB27A	ADC	11/20/1997	SB27A(0-1)	0	12	42.5	0.59	4,800 *J*
SB28A	ARC	11/14/1997	SB28A(0-1)	0	12	5.9	0.70	24 *JN*
SB29A	ARC	11/18/1997	SB29A(0-1)	0	12	16.6	2.2	200 *UJ*
SB30A	ARC	11/19/1997	SB30A(0-1)	0	12	20.0	2.1	450 *J*
SB31A	ARC	12/3/1997	SB31A(0-1)	0	12	12.1	0.36	95 *J*
SB32A	SPD	11/11/1997	SB32A(0-1)	0	12	8.9	0.81	76 *UJ*
SB33A	SPD	11/12/1997	SB33A(0-1)	0	12	12.9	0.56	46 *JN*
SB35A	ADC	11/18/1997	SB35A(0-1)	0	12	54.9	1.5	72,000 *U*
SB36A	ADC	11/12/1997	SB36A(0-1)	0	12	7.3	1.5	56 *J*
SB37A	ARC	11/13/1997	SB37A(0-1)	0	12	10.4	2.4	430 *J*
SB39A	ARC	11/19/1997	SB39A(0-1)	0	12	8.6	2.4	140 *JN*
SB40A	SPD	11/10/1997	SB40A(0-1)	0	12	15.8	0.16 *J*	100 *UJ*
SB41A	SPD	11/11/1997	SB41A(0-1)	0	12	1.5	0.25	860 *UJ*
SB42A	SPD	11/12/1997	SB42A(0-1)	0	12	31.5	23.1	89,000 *UJ*
SB43A	ADC	11/12/1997	SB43A(0-1)	0	12	6.7	0.24 *J*	42 *J*
SB44A	ARC	11/13/1997	SB44A(0-1)	0	12	15.0	1.1	15,000 *J*
SB45A	ARC	11/18/1997	SB45A(0-1)	0	12	12.7	0.31	74 *U*
SB46A	ARC	11/19/1997	SB46A(0-1)	0	12	11.4	0.46 *U*	82 *UJ*
SB47A	SPD	11/10/1997	SB47A(0-1)	0	12	11.7	0.42	130 *JN*
SB48A	SPD	11/11/1997	SB48A(0-1)	0	12	5.7	0.89	78 *UJ*
SB49A	ADC	11/11/1997	SB49A(0-1)	0	12	7.0	0.11 *U*	930 *J*
SS01	BKG	10/20/1997	SS01	0	12	0 *R*	0.14	330 *U*
SS02	BKG	10/20/1997	SS02	0	12	0 *R*	0.77 *J*	240 *UJ*
SS03	ADC	10/20/1997	SS03	0	12	0 *R*	20.4	4,500 *U*
SS04	ADC	10/20/1997	SS04	0	12	0 *R*	18.1	20,000
SS05	ADC	10/20/1997	SS05	0	12	0 *R*	13.1	4,800 *J*
SS06	ADC	10/20/1997	SS06	0	12	0 *R*	2.3	84 *U*
SS07	ARC	10/20/1997	SS07	0	12	0 *R*	10.1	1,700 *JN*
SS08	ARC	10/20/1997	SS08	0	12	0 *R*	9.9	78 *U*

Table E-20. (cont.)

Survey Station	Location	Date	Sample ID	Upper Depth (in.)	Lower Depth (in.)	Arsenic (mg/kg dry)	Mercury (mg/kg dry)	Polychlorinated Biphenyls (μg/kg dry)
SS09	ARC	10/21/1997	SS09	0	12	0 *R*	33.2	5,000 *J*
SS10	ARC	10/21/1997	SS10	0	12	0 *R*	26.0	10,000 *J*
SS11	ARC	12/9/1997	SS11	0	12	0.66 *UJ*	0.060 *U*	76 *UJ*

Note: *J* - estimated
N - for arsenic, spike sample recovery not within control limits; for PCBs, tentatively identified
R - rejected
U - undetected at detection limit shown

Appendix F

Food-Web Model Tables

Contents

Table F-14a. Muskrat EPC calculation based on media and prey CoPC data for OU-3 marsh

Table F-1. Food web model results for short-tailed shrew based on media and prey CoPC data for marsh Station 11A

	Concentration			Daily Exposure				TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Earthworms (mg/kg ww)	Insects (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Pesticides/PCBs											
4,4'-DDD	0.0028	0.0011	0.00055	0.00000056	0.000014	0.000014	0.00096	2.26	NB	0.00043	--
4,4'-DDE	0.0032	0.0011	0.00055	0.00000064	0.000014	0.000015	0.00097	970	NB	0.000001	--
4,4'-DDT	0.064	0.041	0.0041	0.000013	0.00046	0.00047	0.031	0.05	NB	0.63	--
Aldrin	0.027	0.014	0.00011	0.0000054	0.00015	0.00016	0.01	0.25	NB	0.042	--
alpha-Chlordane	0.00039	0.00039	0.00089	0.000000078	0.0000074	0.0000075	0.0005	0.045	NB	0.011	--
alpha-Endosulfan	0.013	0.0011	0.00055	0.0000026	0.000014	0.000016	0.0011	0.6	NB	0.0018	--
alpha-Hexachlorocyclohexane	0.00055	0.00018	0.000085	0.00000011	0.0000023	0.0000024	0.00016	1.3	NB	0.00012	--
beta-Endosulfan	0.0031	0.0012	0.0013	0.00000062	0.000018	0.000018	0.0012	0.6	NB	0.002	--
beta-Hexachlorocyclohexane	0.013	0.00023	0.00011	0.0000026	0.0000029	0.0000055	0.00037	0.4	NB	0.00092	--
delta-Hexachlorocyclohexane	0.0031	0.0011	0.00018	0.00000062	0.000013	0.000013	0.00088	20	NB	0.000044	--
Dieldrin	0.0031	0.0011	0.0014	0.00000062	0.000017	0.000018	0.0012	0.15	NB	0.0078	--
Endosulfan sulfate	0.0013	0.0011	0.00055	0.00000026	0.000014	0.000014	0.00094	NB	NB	--	--
Endrin	0.0015	0.0024	0.0033	0.0000003	0.000038	0.000038	0.0025	0.092	NB	0.028	--
Endrin aldehyde	0.006	0.0044	0.00026	0.0000012	0.000048	0.00005	0.0033	NB	NB	--	--
Endrin ketone	0.013	0.0017	0.00065	0.0000026	0.000021	0.000023	0.0016	NB	NB	--	--
gamma-Chlordane	0.033	0.032	0.0038	0.0000066	0.00036	0.00037	0.024	0.045	NB	0.54	--
gamma-Hexachlorocyclohexane	0.0039	0.0011	0.00015	0.00000078	0.000012	0.000013	0.00088	10	NB	0.000088	--
Heptachlor	0.0019	0.00049	0.00086	0.00000038	0.0000084	0.0000088	0.00058	0.1	NB	0.0058	--
Heptachlor epoxide	0.0037	0.0027	0.002	0.00000074	0.000036	0.000037	0.0025	8	NB	0.00031	--
Methoxychlor	0.0032	0.0013	0.00014	0.00000064	0.000015	0.000015	0.001	4	NB	0.00025	--
Toxaphene	0.41	0.27	0.024	0.000082	0.003	0.0031	0.21	1.6	NB	0.13	--
Polychlorinated biphenyls	2.2	1.8	0.075	0.00044	0.02	0.02	1.3	0.14	0.27	9.6	5
Inorganic Analytes											
Aluminum	10,000	400	90	2.1	4.7	6.7	450	1.9	19	240	24
Antimony	0.58	0.031	0.022	0.00012	0.00041	0.00053	0.035	0.66	NB	0.054	--
Arsenic	32	5.8	0.59	0.0064	0.065	0.071	4.7	0.13	1.3	36	3.6
Barium	47	1	1.2	0.0094	0.015	0.024	1.6	5.1	20	0.32	0.082
Beryllium	0.51	0.0097	0.0028	0.0001	0.00011	0.00022	0.014	0.66	NB	0.022	--
Cadmium	3.2	0.54	0.91	0.00065	0.0091	0.0098	0.65	1	10	0.65	0.065
Chromium	310	2.8	0.89	0.063	0.033	0.096	6.4	3.3	69	1.9	0.093
Cobalt	6.5	0.78	0.093	0.0013	0.0088	0.01	0.67	0.5	2	1.3	0.34
Copper	380	11	42	0.077	0.27	0.35	23	12	15	1.9	1.5
Iron	32,000	480	170	6.4	5.8	12	810	17.9	NB	45	--
Lead	240	3.8	0.74	0.047	0.044	0.091	6.1	11	90	0.55	0.068
Manganese	140	3.5	12	0.028	0.081	0.11	7.3	88	280	0.083	0.026
Mercury	3.6	0.52	0.047	0.00072	0.0058	0.0065	0.43	0.032	0.16	14	2.7
Nickel	50	1.2	0.72	0.01	0.016	0.026	1.7	40	80	0.043	0.021
Selenium	0.4	0.29	0.2	0.00008	0.0039	0.0039	0.26	0.2	0.33	1.3	0.79
Silver	48	1.1	0.53	0.0097	0.014	0.023	1.6	1.81		0.86	--
Thallium	0.067	0.013	0.0026	0.000013	0.00015	0.00016	0.011	0.074	0.74	0.15	0.015
Vanadium	34	0.54	0.24	0.0069	0.0067	0.014	0.9	0.21	2.1	4.3	0.43
Zinc	77	14	55	0.015	0.35	0.37	25	160	320	0.15	0.077

Footnotes on following page.

Table F-1. (cont.)

Note: Hazard quotients greater than or equal to 1.0 are boxed.

--	-	hazard quotient could not be calculated because there was no TRV available
BW	-	body weight
CoPC	-	chemical of potential concern
dw	-	dry weight
LOAEL	-	lowest-observed-adverse-effect level
NB	-	no benchmark
NOAEL	-	no-observed-adverse-effect level
PCB	-	polychlorinated biphenyl
TRV	-	toxicity reference value
ww	-	wet weight

The following data were used to develop this scenario: surface sediment and earthworm data collected at station 11A in 2004 (see Appendix Tables C-3, C-5, C-29 and C-30) and terrestrial insect data collected at the site in 2004 (see Appendix Tables C-11 and C-12). Because only one terrestrial insects composite sample was collected for the whole site, the results for this sample are used to represent insect concentrations in all site models for the short-tailed shrew.

Table F-2. Food web model results for short-tailed shrew based on media and prey CoPC data for marsh Station 12

	Concentration			Daily Exposure				TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Earthworms (mg/kg ww)	Insects (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Pesticides/PCBs											
4,4'-DDD	0.0062	0.0027	0.00055	0.0000012	0.000031	0.000032	0.0022	2.26	NB	0.00096	--
4,4'-DDE	0.0028	0.0014	0.00055	0.00000056	0.000017	0.000018	0.0012	970	NB	0.0000012	--
4,4'-DDT	0.041	0.013	0.0041	0.0000082	0.00016	0.00016	0.011	0.05	NB	0.22	--
Aldrin	0.00055	0.0014	0.00011	0.00000011	0.000016	0.000016	0.001	0.25	NB	0.0042	--
alpha-Chlordane	0.0042	0.00048	0.00089	0.00000084	0.0000084	0.0000092	0.00062	0.045	NB	0.014	--
alpha-Endosulfan	0.0011	0.0014	0.00055	0.00000022	0.000017	0.000017	0.0012	0.6	NB	0.0019	--
alpha-Hexachlorocyclohexane	0.0014	0.0014	0.000085	0.00000028	0.000015	0.000016	0.001	1.3	NB	0.00081	--
beta-Endosulfan	0.003	0.0014	0.0013	0.0000006	0.00002	0.00002	0.0014	0.6	NB	0.0023	--
beta-Hexachlorocyclohexane	0.00046	0.00028	0.00011	0.000000092	0.0000034	0.0000035	0.00023	0.4	NB	0.00059	--
delta-Hexachlorocyclohexane	0.0015	0.0023	0.00018	0.0000003	0.000025	0.000026	0.0017	20	NB	0.000086	--
Dieldrin	0.0065	0.00015	0.0014	0.0000013	0.0000067	0.000008	0.00053	0.15	NB	0.0035	--
Endosulfan sulfate	0.0013	0.00036	0.00055	0.00000026	0.0000059	0.0000061	0.00041	NB	NB	--	--
Endrin	0.0011	0.0046	0.0033	0.00000022	0.000062	0.000062	0.0041	0.092	NB	0.045	--
Endrin aldehyde	0.0078	0.0024	0.00026	0.0000016	0.000027	0.000028	0.0019	NB	NB	--	--
Endrin ketone	0.006	0.0014	0.00065	0.0000012	0.000017	0.000019	0.0012	NB	NB	--	--
gamma-Chlordane	0.036	0.021	0.0038	0.0000072	0.00024	0.00025	0.017	0.045	NB	0.37	--
gamma-Hexachlorocyclohexane	0.00021	0.0014	0.00015	0.000000042	0.000016	0.000016	0.001	10	NB	0.0001	--
Heptachlor	0.0002	0.0006	0.00086	0.00000004	0.0000096	0.0000096	0.00064	0.1	NB	0.0064	--
Heptachlor epoxide	0.041	0.0014	0.002	0.0000082	0.000022	0.000031	0.002	8	NB	0.00025	--
Methoxychlor	0.022	0.0014	0.00014	0.0000044	0.000016	0.00002	0.0013	4	NB	0.00033	--
Toxaphene	0.12	0.16	0.024	0.000024	0.0018	0.0018	0.12	1.6	NB	0.077	--
Polychlorinated biphenyls	2.6	1.9	0.075	0.00052	0.021	0.021	1.4	0.14	0.27	10	5.3
Inorganic Analytes											
Aluminum	19,000	890	90	3.7	9.9	14	910	1.9	19	480	48
Antimony	1.5	0.074	0.022	0.00031	0.00088	0.0012	0.079	0.66	NB	0.12	--
Arsenic	1,500	48	0.59	0.3	0.52	0.81	54	0.13	1.3	420	42
Barium	130	3.6	1.2	0.026	0.043	0.069	4.6	5.1	20	0.9	0.23
Beryllium	0.94	0.037	0.0028	0.00019	0.00041	0.0006	0.04	0.66	NB	0.06	--
Cadmium	3	0.33	0.91	0.00059	0.0068	0.0074	0.5	1	10	0.5	0.05
Chromium	110	2.7	0.89	0.021	0.032	0.053	3.6	3.3	69	1.1	0.052
Cobalt	11	1.5	0.093	0.0021	0.017	0.019	1.2	0.5	2	2.5	0.62
Copper	290	15	42	0.058	0.31	0.37	25	12	15	2.1	1.6
Iron	36,000	1,000	170	7.2	12	19	1,200	17.9	NB	70	--
Lead	190	3.9	0.74	0.038	0.045	0.083	5.5	11	90	0.5	0.062
Manganese	240	6.8	12	0.048	0.12	0.16	11	88	280	0.12	0.039
Mercury	21	0.45	0.047	0.0041	0.005	0.0091	0.61	0.032	0.16	19	3.8
Nickel	35	1.6	0.72	0.007	0.02	0.027	1.8	40	80	0.045	0.022
Selenium	7.4	0.24	0.2	0.0015	0.0033	0.0048	0.32	0.2	0.33	1.6	0.97
Silver	6.2	0.38	0.53	0.0012	0.006	0.0073	0.48	1.81	NB	0.27	--
Thallium	0.13	0.044	0.0026	0.000026	0.00048	0.00051	0.034	0.074	0.74	0.46	0.046
Vanadium	58	1.8	0.24	0.012	0.02	0.032	2.1	0.21	2.1	10	1
Zinc	440	30	55	0.088	0.52	0.61	41	160	320	0.25	0.13

Footnotes on following page.

Table F-2. (cont.)

Note: Hazard quotients greater than or equal to 1.0 are boxed.

--	-	hazard quotient could not be calculated because there was no TRV available
BW	-	body weight
CoPC	-	chemical of potential concern
dw	-	dry weight
LOAEL	-	lowest-observed-adverse-effect level
NB	-	no benchmark
NOAEL	-	no-observed-adverse-effect level
PCB	-	polychlorinated biphenyl
TRV	-	toxicity reference value
ww	-	wet weight

The following data were used to develop this scenario: surface sediment and earthworm data collected at station 12 in 2004 (see Appendix Tables C-3, C-5, C-29 and C-30) and terrestrial insect data collected at the site in 2004 (see Appendix Tables C-11 and C-12). Because only one terrestrial insects composite sample was collected for the whole site, the results for this sample are used to represen insect concentrations in all site models for the short-tailed shrew.

Table F-3. Food web model results for short-tailed shrew based on media and prey CoPC data for marsh Station 13

	Concentration			Daily Exposure		Total Daily	Normalized	TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Earthworms (mg/kg ww)	Insects (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Intake (mg/day)	Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	Hazard Quotient	Hazard Quotient
Semivolatile Organic Compounds[a]											
2,4,5-Trichlorophenol	0.0031	0.18	0.18	0.00000062	0.0026	0.0026	0.17	100	NB	0.0017	--
2,4,6-Trichlorophenol	0.0019	0.15	0.15	0.00000038	0.0022	0.0022	0.14	NB	NB	--	--
2,4-Dichlorophenol	0.0019	0.2	0.2	0.00000038	0.0029	0.0029	0.19	0.3	NB	0.64	--
2,4-Dimethylphenol	0.006	0.21	0.21	0.0000012	0.003	0.003	0.2	50	NB	0.004	--
2,4-Dinitrophenol	0.037	0.37	0.37	0.0000074	0.0053	0.0053	0.36	NB	NB	--	--
2,4-Dinitrotoluene	0.0029	0.14	0.14	0.00000058	0.002	0.002	0.13	0.2	NB	0.67	--
2,6-Dinitrotoluene	0.0029	0.12	0.12	0.00000058	0.0017	0.0017	0.12	3.54	NB	0.033	--
2-Chloronaphthalene	0.0037	0.095	0.095	0.00000074	0.0014	0.0014	0.091	250	NB	0.00036	--
2-Chlorophenol	0.0018	0.18	0.18	0.00000036	0.0026	0.0026	0.17	5	NB	0.035	--
2-Methyl-4,6-dinitrophenol	0.0018	0.24	0.24	0.00000036	0.0035	0.0035	0.23	0.42	NB	0.55	--
2-Methylnaphthalene	0.0081	0.0023	0.0023	0.0000016	0.000033	0.000035	0.0023	5	NB	0.00046	--
2-Methylphenol	0.0035	0.85	0.85	0.0000007	0.012	0.012	0.82	50	NB	0.016	--
2-Nitroaniline	0.0028	0.42	0.42	0.00000056	0.006	0.006	0.4	71.2	NB	0.0057	--
2-Nitrophenol	0.0027	0.24	0.24	0.00000054	0.0035	0.0035	0.23	6.68	NB	0.034	--
3,3'-Dichlorobenzidine	0.0038	13	13	0.00000076	0.19	0.19	12	NB	NB	--	--
3-Nitroaniline	0.0027	0.15	0.15	0.00000054	0.0022	0.0022	0.14	18	NB	0.008	--
4-Bromophenyl ether	0.0015	0.09	0.09	0.0000003	0.0013	0.0013	0.086	NB	NB	--	--
4-Chloro-3-methylphenol	0.0022	1.2	1.2	0.00000044	0.017	0.017	1.2	14.2	NB	0.081	--
4-Chloroaniline	0.0022	0.095	0.095	0.00000044	0.0014	0.0014	0.091	1.25	NB	0.073	--
4-Chlorophenyl-phenyl ether	0.0021	0.075	0.075	0.00000042	0.0011	0.0011	0.072	NB	NB	--	--
4-Methylphenol	0.003	0.24	0.24	0.0000006	0.0035	0.0035	0.23	NB	NB	--	--
4-Nitroaniline	0.0035	0.42	0.42	0.0000007	0.006	0.006	0.4	NB	NB	--	--
4-Nitrophenol	0.031	0.12	0.12	0.0000062	0.0017	0.0017	0.12	NB	NB	--	--
Acenaphthene	0.0023	0.00012	0.00012	0.00000046	0.0000017	0.0000022	0.00015	175	NB	0.00000083	--
Acenaphthylene	0.0069	0.00008	0.00008	0.0000014	0.0000012	0.0000025	0.00017	NB	NB	--	--
Acetophenone	0.013	0.32	0.32	0.0000026	0.0046	0.0046	0.31	423	NB	0.00073	--
Anthracene	0.0075	0.0016	0.0016	0.0000015	0.000023	0.000025	0.0016	1,000	NB	0.0000016	--
Atrazine	0.0023	0.09	0.09	0.00000046	0.0013	0.0013	0.086	3.5	NB	0.025	--
Benz[a]anthracene	0.038	0.003	0.003	0.0000076	0.000043	0.000051	0.0034	NB	NB	--	--
Benzaldehyde	0.0095	12	12	0.0000019	0.17	0.17	12	143	NB	0.081	--
Benzo[a]pyrene	0.056	0.0033	0.0033	0.000011	0.000048	0.000059	0.0039	1	NB	0.0039	--
Benzo[b]fluoranthene	0.07	0.0048	0.0048	0.000014	0.000069	0.000083	0.0055	NB	NB	--	--
Benzo[ghi]perylene	0.048	0.0028	0.0028	0.0000096	0.00004	0.00005	0.0033	NB	NB	--	--
Benzo[k]fluoranthene	0.023	0.0038	0.0038	0.0000046	0.000055	0.000059	0.004	NB	NB	--	--
Biphenyl	0.005	0.075	0.075	0.000001	0.0011	0.0011	0.072	50	NB	0.0014	--
bis[2-chloroethoxy]methane	0.0014	0.08	0.08	0.00000028	0.0012	0.0012	0.077	13	NB	0.0059	--
bis[2-chloroethyl]ether	0.013	0.14	0.14	0.0000026	0.002	0.002	0.13	1.5	NB	0.09	--
Bis[2-chloroisopropyl]ether	0.0013	0.18	0.18	0.00000026	0.0026	0.0026	0.17	35.8	NB	0.0048	--
bis[2-Ethylhexyl]phthalate	0.012	0.85	0.85	0.0000024	0.012	0.012	0.82	3.5	NB	0.23	--
Butylbenzyl phthalate	0.012	0.23	0.23	0.0000024	0.0033	0.0033	0.22	159	NB	0.0014	--
Caprolactam	0.013	0.21	0.21	0.0000026	0.003	0.003	0.2	50	NB	0.004	--
Carbazole	0.0048	0.55	0.55	0.00000096	0.0079	0.0079	0.53	10	NB	0.053	--
Chrysene	0.056	0.0085	0.0085	0.000011	0.00012	0.00013	0.0089	NB	NB	--	--
Dibenz[a,h]anthracene	0.018	0.00076	0.00076	0.0000036	0.000011	0.000015	0.00097	NB	NB	--	--

Table F-3. (cont.)

Analyte	Concentration			Daily Exposure		Total Daily	Normalized	TRV		Hazard Quotient	
	Sediment (mg/kg dw)	Earthworms (mg/kg ww)	Insects (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Intake (mg/day)	Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	Hazard Quotient	Hazard Quotient
Dibenzofuran	0.0029	0.0013	0.0013	0.00000058	0.000019	0.000019	0.0013	12.5	NB	0.0001	--
Diethyl phthalate	0.0036	0.15	0.15	0.00000072	0.0022	0.0022	0.14	4,580	NB	0.000031	--
Dimethyl phthalate	0.0019	0.085	0.085	0.00000038	0.0012	0.0012	0.082	48	NB	0.0017	--
Di-n-butyl phthalate	0.01	0.45	0.45	0.000002	0.0065	0.0065	0.43	550	NB	0.00079	--
Di-n-octyl phthalate	0.0013	0.21	0.21	0.00000026	0.003	0.003	0.2	17.5	NB	0.012	--
Fluoranthene	0.093	0.0081	0.0081	0.000019	0.00012	0.00014	0.009	125	NB	0.000072	--
Fluorene	0.0018	0.0015	0.0015	0.00000036	0.000022	0.000022	0.0015	125	NB	0.000012	--
Hexachlorobenzene	0.0022	0.095	0.095	0.00000044	0.0014	0.0014	0.091	0.08	NB	$\boxed{1.1}$	--
Hexachlorobutadiene	0.0015	0.14	0.14	0.0000003	0.002	0.002	0.13	1.74	NB	0.077	--
Hexachlorocyclopentadiene	0.016	80	80	0.0000032	1.2	1.2	77	7	NB	$\boxed{11}$	--
Hexachloroethane	0.0023	0.14	0.14	0.00000046	0.002	0.002	0.13	1	NB	0.13	--
Indeno[1,2,3-cd]pyrene	0.042	0.0035	0.0035	0.0000084	0.00005	0.000059	0.0039	NB	NB	--	--
Isophorone	0.0017	0.095	0.095	0.00000034	0.0014	0.0014	0.091	150	NB	0.00061	--
Naphthalene	0.01	0.0042	0.0042	0.000002	0.00006	0.000062	0.0042	71	NB	0.000059	--
Nitrobenzene	0.029	0.16	0.16	0.0000058	0.0023	0.0023	0.15	12	NB	0.013	--
N-nitroso-di-n-propylamine	0.0033	0.14	0.14	0.00000066	0.002	0.002	0.13	9.6	NB	0.014	--
N-nitrosodiphenylamine	0.0023	0.16	0.16	0.00000046	0.0023	0.0023	0.15	NB	NB	--	--
Pentachlorophenol	0.009	0.5	0.5	0.0000018	0.0072	0.0072	0.48	3	NB	0.16	--
Phenanthrene	0.036	0.0058	0.0058	0.0000072	0.000084	0.000091	0.0061	14	NB	0.00043	--
Phenol	0.0046	0.28	0.28	0.00000092	0.004	0.004	0.27	60	NB	0.0045	--
Pyrene	0.071	0.007	0.007	0.000014	0.0001	0.00012	0.0077	75	NB	0.0001	--
Total PAHs	0.57	0.06	0.06	0.00011	0.00086	0.00098	0.065	1	10	0.065	0.0065
Pesticides/PCBs											
4,4'-DDD	0.00065	0.002	0.00055	0.00000013	0.000024	0.000024	0.0016	2.26	NB	0.0007	--
4,4'-DDE	0.0091	0.0068	0.00055	0.0000018	0.000075	0.000077	0.0051	970	NB	0.0000053	--
4,4'-DDT	0.067	0.027	0.0041	0.000013	0.00031	0.00032	0.021	0.05	NB	0.43	--
Aldrin	0.0011	0.0018	0.00011	0.00000022	0.00002	0.00002	0.0013	0.25	NB	0.0053	--
alpha-Chlordane	0.0026	0.00038	0.00089	0.00000052	0.0000073	0.0000078	0.00052	0.045	NB	0.012	--
alpha-Endosulfan	0.0007	0.00065	0.00055	0.00000014	0.000009	0.0000091	0.00061	0.6	NB	0.001	--
alpha-Hexachlorocyclohexane	0.00092	0.00017	0.000085	0.00000018	0.0000021	0.0000023	0.00016	1.3	NB	0.00012	--
beta-Endosulfan	0.0025	0.00037	0.0013	0.0000005	0.0000087	0.0000092	0.00061	0.6	NB	0.001	--
beta-Hexachlorocyclohexane	0.0011	0.0011	0.00011	0.00000022	0.000012	0.000012	0.00083	0.4	NB	0.0021	--
delta-Hexachlorocyclohexane	0.0009	0.00098	0.00018	0.00000018	0.000011	0.000011	0.00076	20	NB	0.000038	--
Dieldrin	0.0019	0.0016	0.0014	0.00000038	0.000022	0.000023	0.0015	0.15	NB	0.01	--
Endosulfan sulfate	0.0035	0.0011	0.00055	0.0000007	0.000014	0.000015	0.00097	NB	NB	--	--
Endrin	0.00025	0.0011	0.0033	0.00000005	0.000024	0.000024	0.0016	0.092	NB	0.017	--
Endrin aldehyde	0.0074	0.0011	0.00026	0.0000015	0.000013	0.000014	0.00095	NB	NB	--	--
Endrin ketone	0.005	0.00041	0.00065	0.000001	0.0000068	0.0000078	0.00052	NB	NB	--	--
gamma-Chlordane	0.0021	0.00085	0.0038	0.00000042	0.000023	0.000023	0.0016	0.045	NB	0.034	--
gamma-Hexachlorocyclohexane	0.0012	0.0011	0.00015	0.00000024	0.000012	0.000013	0.00084	10	NB	0.000084	--
Heptachlor	0.0001	0.00047	0.00086	0.00000002	0.0000082	0.0000082	0.00055	0.1	NB	0.0055	--
Heptachlor epoxide	0.0012	0.0011	0.002	0.00000024	0.000019	0.000019	0.0013	8	NB	0.00016	--
Methoxychlor	0.0013	0.0014	0.00014	0.00000026	0.000016	0.000016	0.0011	4	NB	0.00026	--
Toxaphene	0.12	0.055	0.024	0.000024	0.00068	0.0007	0.047	1.6	NB	0.029	--
Polychlorinated biphenyls	0.57	0.34	0.075	0.00011	0.0039	0.0041	0.27	0.14	0.27	$\boxed{1.9}$	$\boxed{1}$

Table F-3. (cont.)

Analyte	Concentration: Sediment (mg/kg dw)	Concentration: Earthworms (mg/kg ww)	Concentration: Insects (mg/kg ww)	Daily Exposure: Sediment (mg/day)	Daily Exposure: Food (mg/day)	Total Daily Intake (mg/day)	Normalized Exposure (mg/kg-day)	TRV: NOAEL (mg/kg-day)	TRV: LOAEL (mg/kg-day)	Hazard Quotient: Hazard Quotient	Hazard Quotient: Hazard Quotient
Inorganic Analytes											
Aluminum	14,000	430	90	2.8	4.9	7.8	520	1.9	19	$\boxed{270}$	$\boxed{27}$
Antimony	1.6	0.082	0.022	0.00032	0.00096	0.0013	0.085	0.66	NB	0.13	--
Arsenic	68	7.5	0.59	0.014	0.083	0.097	6.4	0.13	1.3	$\boxed{50}$	$\boxed{5}$
Barium	67	1.5	1.2	0.014	0.021	0.034	2.3	5.1	20	0.44	0.11
Beryllium	0.49	0.012	0.0028	0.000098	0.00014	0.00024	0.016	0.66	NB	0.024	--
Cadmium	0.13	0.19	0.91	0.000026	0.0053	0.0054	0.36	1	10	0.36	0.036
Chromium	47	0.96	0.89	0.0095	0.014	0.023	1.5	3.3	69	0.47	0.022
Cobalt	6.9	0.64	0.093	0.0014	0.0072	0.0086	0.58	0.5	2	$\boxed{1.2}$	0.29
Copper	480	11	42	0.096	0.27	0.36	24	12	15	$\boxed{2}$	$\boxed{1.6}$
Iron	37,000	580	170	7.4	6.8	14	950	17.9	NB	$\boxed{53}$	--
Lead	180	2.5	0.74	0.036	0.03	0.066	4.4	11	90	0.4	0.049
Manganese	230	3.7	12	0.045	0.083	0.13	8.5	88	280	0.097	0.03
Mercury	0.88	0.08	0.047	0.00018	0.001	0.0012	0.081	0.032	0.16	$\boxed{2.5}$	0.5
Nickel	11	0.55	0.72	0.0022	0.0085	0.011	0.72	40	80	0.018	0.009
Selenium	2.7	0.16	0.2	0.00054	0.0024	0.003	0.2	0.2	0.33	$\boxed{1}$	0.6
Silver	3.9	0.15	0.53	0.00078	0.0035	0.0043	0.29	1.81	NB	0.16	--
Thallium	0.13	0.011	0.0026	0.000026	0.00013	0.00015	0.01	0.074	0.74	0.14	0.014
Vanadium	67	1.4	0.24	0.013	0.016	0.029	2	0.21	2.1	$\boxed{9.3}$	0.93
Zinc	95	15	55	0.019	0.36	0.38	25	160	320	0.16	0.079

Note: Hazard quotients greater than or equal to 1.0 are boxed.

-- - hazard quotient could not be calculated because there was no TRV available
BW - body weight
CoPC - chemical of potential concern
dw - dry weight
LOAEL - lowest-observed-adverse-effect level
NB - no benchmark
NOAEL - no-observed-adverse-effect level
PAH - polycyclic aromatic hydrocarbon
PCB - polychlorinated biphenyl
TRV - toxicity reference value
ww - wet weight

The following data were used to develop this scenario: surface sediment and earthworm data collected at station 13 in 2004 (see Appendix Tables C-2, C-3, C-5, C-28, C-29 and C-30) and terrestrial insect data collected at the site in 2004 (see Appendix Tables C-11 and C-12). Because only one terrestrial insects composite sample was collected for the whole site, the results for this sample are used to represent insect concentrations in all site models for the short-tailed shrew.

[a] Semivolatile organic compounds were not analyzed in insects, and earthworm concentrations were used as surrogate values for calculations.

Table F-4. Food web model results for short-tailed shrew based on media and prey CoPC data for marsh Station 13A

	Concentration			Daily Exposure				TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Earthworms (mg/kg ww)	Insects (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Pesticides/PCBs											
4,4'-DDD	0.00051	0.00013	0.00055	0.0000001	0.0000034	0.0000035	0.00023	2.26	NB	0.0001	--
4,4'-DDE	0.0008	0.0012	0.00055	0.00000016	0.000015	0.000015	0.001	970	NB	0.000001	--
4,4'-DDT	0.0022	0.0026	0.0041	0.00000044	0.000043	0.000043	0.0029	0.05	NB	0.058	--
Aldrin	0.00015	0.00095	0.00011	0.00000003	0.000011	0.000011	0.00071	0.25	NB	0.0028	--
alpha-Chlordane	0.00035	0.00035	0.00089	0.00000007	0.000007	0.0000071	0.00047	0.045	NB	0.01	--
alpha-Endosulfan	0.000065	0.00041	0.00055	0.000000013	0.0000064	0.0000064	0.00043	0.6	NB	0.00071	--
alpha-Hexachlorocyclohexane	0.000048	0.001	0.000085	9.6E-09	0.000011	0.000011	0.00074	1.3	NB	0.00057	--
beta-Endosulfan	0.000035	0.00034	0.0013	0.000000007	0.0000084	0.0000084	0.00056	0.6	NB	0.00093	--
beta-Hexachlorocyclohexane	0.0088	0.0023	0.00011	0.0000018	0.000025	0.000027	0.0018	0.4	NB	0.0045	--
delta-Hexachlorocyclohexane	0.00008	0.00033	0.00018	0.000000016	0.0000042	0.0000042	0.00028	20	NB	0.000014	--
Dieldrin	0.00029	0.00011	0.0014	0.000000058	0.0000062	0.0000063	0.00042	0.15	NB	0.0028	--
Endosulfan sulfate	0.00012	0.00026	0.00055	0.000000024	0.0000048	0.0000048	0.00032	NB	NB	--	--
Endrin	0.00014	0.000095	0.0033	0.000000028	0.000013	0.000013	0.00086	0.092	NB	0.0094	--
Endrin aldehyde	0.00054	0.00095	0.00026	0.00000011	0.000011	0.000011	0.00075	NB	NB	--	--
Endrin ketone	0.0032	0.0021	0.00065	0.00000064	0.000025	0.000026	0.0017	NB	NB	--	--
gamma-Chlordane	0.0003	0.0029	0.0038	0.00000006	0.000045	0.000045	0.003	0.045	NB	0.067	--
gamma-Hexachlorocyclohexane	0.00006	0.00065	0.00015	0.000000012	0.0000076	0.0000076	0.0005	10	NB	0.00005	--
Heptachlor	0.00006	0.00043	0.00086	0.000000012	0.0000077	0.0000078	0.00052	0.1	NB	0.0052	--
Heptachlor epoxide	0.00008	0.00095	0.002	0.000000016	0.000017	0.000017	0.0012	8	NB	0.00015	--
Methoxychlor	0.00029	0.00075	0.00014	0.000000058	0.0000086	0.0000087	0.00058	4	NB	0.00014	--
Toxaphene	0.007	0.048	0.024	0.0000014	0.0006	0.00061	0.04	1.6	NB	0.025	--
Polychlorinated biphenyls	0.036	0.19	0.075	0.0000072	0.0023	0.0023	0.16	0.14	0.27	1.1	0.58
Inorganic Analytes											
Aluminum	3,800	320	90	0.77	3.8	4.5	300	1.9	19	160	16
Antimony	0.23	0.016	0.022	0.000046	0.00025	0.0003	0.02	0.66	NB	0.03	--
Arsenic	9.3	2.5	0.59	0.0019	0.029	0.031	2.1	0.13	1.3	16	1.6
Barium	10	0.81	1.2	0.002	0.013	0.015	1	5.1	20	0.2	0.05
Beryllium	0.25	0.009	0.0028	0.00005	0.00011	0.00016	0.011	0.66	NB	0.016	--
Cadmium	0.14	0.55	0.91	0.000028	0.0092	0.0092	0.62	1	10	0.62	0.062
Chromium	14	0.89	0.89	0.0028	0.013	0.016	1	3.3	69	0.32	0.015
Cobalt	1.6	0.85	0.093	0.00032	0.0095	0.0098	0.66	0.5	2	1.3	0.33
Copper	16	11	42	0.0032	0.27	0.28	18	12	15	1.5	1.2
Iron	10,000	250	170	2	3.3	5.3	350	17.9	NB	20	--
Lead	37	6.7	0.74	0.0075	0.075	0.083	5.5	11	90	0.5	0.061
Manganese	42	2.5	12	0.0084	0.07	0.078	5.2	88	280	0.059	0.019
Mercury	0.073	0.07	0.047	0.000015	0.00093	0.00094	0.063	0.032	0.16	2	0.39
Nickel	1.8	1.7	0.72	0.00037	0.021	0.021	1.4	40	80	0.036	0.018
Selenium	0.3	0.18	0.2	0.00006	0.0027	0.0027	0.18	0.2	0.33	0.91	0.55
Silver	0.5	0.12	0.53	0.0001	0.0032	0.0033	0.22	1.81	NB	0.12	--
Thallium	0.022	0.0075	0.0026	0.0000044	0.00009	0.000095	0.0063	0.074	0.74	0.085	0.0085
Vanadium	13	0.53	0.24	0.0026	0.0066	0.0092	0.61	0.21	2.1	2.9	0.29
Zinc	43	18	55	0.0086	0.4	0.4	27	160	320	0.17	0.084

Footnotes on following page.

Table F-4. (cont.)

Note: Hazard quotients greater than or equal to 1.0 are boxed.

--	-	hazard quotient could not be calculated because there was no TRV available
BW	-	body weight
CoPC	-	chemical of potential concern
dw	-	dry weight
LOAEL	-	lowest-observed-adverse-effect level
NB	-	no benchmark
NOAEL	-	no-observed-adverse-effect level
PCB	-	polychlorinated biphenyl
TRV	-	toxicity reference value
ww	-	wet weight

The following data were used to develop this scenario: surface sediment and earthworm data collected at station 13A in 2004 (see Appendix Tables C-3, C-5, C-29 and C-30) and terrestrial insect data collected at the site in 2004 (see Appendix Tables C-11 and C-12). Because only one terrestrial insects composite sample was collected for the whole site, the results for this sample are used to represent insect concentrations in all site models for the short-tailed shrew.

Table F-5. Food web model results for short-tailed shrew based on media and prey CoPC data for marsh Station 14

Analyte	Concentration: Sediment (mg/kg dw)	Concentration: Earthworms (mg/kg ww)	Concentration: Insects (mg/kg ww)	Daily Exposure: Sediment (mg/day)	Daily Exposure: Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV: NOAEL (mg/kg-day)	TRV: LOAEL (mg/kg-day)	Hazard Quotient: NOAEL Hazard Quotient	Hazard Quotient: LOAEL Hazard Quotient
Pesticides/PCBs											
4,4'-DDD	0.013	0.0032	0.00055	0.0000026	0.000037	0.000039	0.0026	2.26	NB	0.0012	--
4,4'-DDE	0.014	0.0049	0.00055	0.0000028	0.000055	0.000058	0.0038	970	NB	0.000004	--
4,4'-DDT	0.025	0.0069	0.0041	0.000005	0.000089	0.000094	0.0063	0.05	NB	0.13	--
Aldrin	0.004	0.0033	0.00011	0.0000008	0.000036	0.000037	0.0025	0.25	NB	0.0098	--
alpha-Chlordane	0.0062	0.0014	0.00089	0.0000012	0.000018	0.00002	0.0013	0.045	NB	0.029	--
alpha-Endosulfan	0.0056	0.0014	0.00055	0.0000011	0.000017	0.000018	0.0012	0.6	NB	0.002	--
alpha-Hexachlorocyclohexane	0.00082	0.0014	0.000085	0.00000016	0.000015	0.000016	0.001	1.3	NB	0.0008	--
beta-Endosulfan	0.0027	0.00046	0.0013	0.00000054	0.0000096	0.00001	0.00068	0.6	NB	0.0011	--
beta-Hexachlorocyclohexane	0.0033	0.00028	0.00011	0.00000066	0.0000034	4.1E-06	0.00027	0.4	NB	0.00068	--
delta-Hexachlorocyclohexane	0.00032	0.0023	0.00018	0.000000064	0.000025	0.000026	0.0017	20	NB	0.000085	--
Dieldrin	0.019	0.0014	0.0014	0.0000038	0.00002	0.000024	0.0016	0.15	NB	0.011	--
Endosulfan sulfate	0.0012	0.00036	0.00055	0.00000024	0.0000059	6.1E-06	0.00041	NB	NB	--	--
Endrin	0.0012	0.0014	0.0033	0.00000024	0.000027	0.000027	0.0018	0.092	NB	0.02	--
Endrin aldehyde	0.0031	0.0014	0.00026	0.00000062	0.000016	0.000017	0.0011	NB	NB	--	--
Endrin ketone	0.0012	0.00039	0.00065	0.00000024	0.0000066	6.8E-06	0.00045	NB	NB	--	--
gamma-Chlordane	0.013	0.0041	0.0038	0.0000026	0.000058	0.000061	0.004	0.045	NB	0.09	--
gamma-Hexachlorocyclohexane	0.00023	0.00037	0.00015	0.000000046	0.0000045	4.6E-06	0.00031	10	NB	0.000031	--
Heptachlor	0.00023	0.0006	0.00086	0.000000046	0.0000096	9.6E-06	0.00064	0.1	NB	0.0064	--
Heptachlor epoxide	0.0066	0.0014	0.002	0.0000013	0.000022	0.000024	0.0016	8	NB	0.0002	--
Methoxychlor	0.0012	0.0059	0.00014	0.00000024	0.000064	0.000064	0.0043	4	NB	0.0011	--
Toxaphene	0.17	0.08	0.024	0.000034	0.00095	0.00098	0.066	1.6	NB	0.041	--
Polychlorinated biphenyls	0.87	0.37	0.075	0.00017	0.0043	0.0044	0.3	0.14	0.27	2.1	1.1
Inorganic Analytes											
Aluminum	14,000	840	90	2.7	9.4	12	810	1.9	19	430	43
Antimony	1.1	0.064	0.022	0.00022	0.00077	0.00099	0.066	0.66	NB	0.1	--
Arsenic	43	5.4	0.59	0.0087	0.06	0.069	4.6	0.13	1.3	35	3.5
Barium	56	2.1	1.2	0.011	0.027	0.038	2.6	5.1	20	0.5	0.13
Beryllium	1.5	0.048	0.0028	0.0003	0.00053	0.00083	0.055	0.66	NB	0.084	--
Cadmium	0.99	0.31	0.91	0.0002	0.0066	0.0068	0.45	1	10	0.45	0.045
Chromium	250	5.7	0.89	0.049	0.065	0.11	7.6	3.3	69	2.3	0.11
Cobalt	30	1.7	0.093	0.0059	0.019	0.025	1.6	0.5	2	3.3	0.82
Copper	1,200	44	42	0.25	0.62	0.87	58	12	15	4.8	3.9
Iron	51,000	1,500	170	10	16	26	1800	17.9	NB	99	--
Lead	240	3.5	0.74	0.048	0.04	0.089	5.9	11	90	0.54	0.066
Manganese	1,400	22	12	0.29	0.28	0.57	38	88	280	0.43	0.13
Mercury	2.8	0.13	0.047	0.00057	0.0016	0.0021	0.14	0.032	0.16	4.5	0.89
Nickel	63	2.1	0.72	0.013	0.025	0.038	2.5	40	80	0.063	0.032
Selenium	4.5	0.32	0.2	0.0009	0.0042	0.0051	0.34	0.2	0.33	1.7	1
Silver	24	0.97	0.53	0.0047	0.012	0.017	1.1	1.81	NB	0.63	--
Thallium	0.088	0.017	0.0026	0.000018	0.00019	0.00021	0.014	0.074	0.74	0.19	0.019
Vanadium	88	3.1	0.24	0.018	0.034	0.052	3.5	0.21	2.1	17	1.7
Zinc	340	26	55	0.069	0.48	0.55	37	160	320	0.23	0.11

Footnotes on following page.

Table F-5. (cont.)

Note: Hazard quotients greater than or equal to 1.0 are boxed.

--	-	hazard quotient could not be calculated because there was no TRV available
BW	-	body weight
CoPC	-	chemical of potential concern
dw	-	dry weight
LOAEL	-	lowest-observed-adverse-effect level
NB	-	no benchmark
NOAEL	-	no-observed-adverse-effect level
PCB	-	polychlorinated biphenyl
TRV	-	toxicity reference value
ww	-	wet weight

The following data were used to develop this scenario: surface sediment and earthworm data collected at station 14 in 2004 (see Appendix Tables C-3, C-5, C-29 and C-30) and terrestrial insect data collected at the site in 2004 (see Appendix Tables C-11 and C-12). Because only one terrestrial insects composite sample was collected for the whole site, the results for this sample are used to represent insect concentrations in all site models for the short-tailed shrew.

Table F-6. Food web model results for short-tailed shrew based on media and prey CoPC data for marsh Station 16

Analyte	Concentration Sediment (mg/kg dw)	Concentration Earthworms (mg/kg ww)	Concentration Insects (mg/kg ww)	Daily Exposure Sediment (mg/day)	Daily Exposure Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV NOAEL (mg/kg-day)	TRV LOAEL (mg/kg-day)	Hazard Quotient NOAEL Hazard Quotient	Hazard Quotient LOAEL Hazard Quotient
Pesticides/PCBs											
4,4'-DDD	0.00065	0.0012	0.00055	0.00000013	0.000015	0.000015	0.001	2.26	NB	0.00044	--
4,4'-DDE	0.0035	0.0012	0.00055	0.0000007	0.000015	0.000016	0.001	970	NB	0.0000011	--
4,4'-DDT	0.025	0.032	0.0041	0.000005	0.00036	0.00037	0.024	0.05	NB	0.49	--
Aldrin	0.0018	0.0015	0.00011	0.00000036	0.000017	0.000017	0.0011	0.25	NB	0.0045	--
alpha-Chlordane	0.0016	0.0012	0.00089	0.00000032	0.000016	0.000016	0.0011	0.045	NB	0.024	--
alpha-Endosulfan	0.0035	0.0012	0.00055	0.0000007	0.000015	0.000016	0.001	0.6	NB	0.0017	--
alpha-Hexachlorocyclohexane	0.0006	0.00019	0.000085	0.00000012	0.0000024	0.0000025	0.00017	1.3	NB	0.00013	--
beta-Endosulfan	0.0065	0.0021	0.0013	0.0000013	0.000027	0.000029	0.0019	0.6	NB	0.0032	--
beta-Hexachlorocyclohexane	0.0016	0.0012	0.00011	0.00000032	0.000013	0.000014	0.00091	0.4	NB	0.0023	--
delta-Hexachlorocyclohexane	0.001	0.0029	0.00018	0.0000002	0.000032	0.000032	0.0021	20	NB	0.00011	--
Dieldrin	0.02	0.0012	0.0014	0.000004	0.000018	0.000022	0.0015	0.15	NB	0.0098	--
Endosulfan sulfate	0.0015	0.00032	0.00055	0.0000003	0.0000054	0.0000057	0.00038	NB	NB	--	--
Endrin	0.013	0.0084	0.0033	0.0000026	0.0001	0.00011	0.007	0.092	NB	0.076	--
Endrin aldehyde	0.0048	0.0012	0.00026	0.00000096	0.000014	0.000015	0.00099	NB	NB	--	--
Endrin ketone	0.019	0.0037	0.00065	0.0000038	0.000042	0.000046	0.0031	NB	NB	--	--
gamma-Chlordane	0.039	0.048	0.0038	0.0000078	0.00053	0.00054	0.036	0.045	NB	0.8	--
gamma-Hexachlorocyclohexane	0.0007	0.0012	0.00015	0.00000014	0.000014	0.000014	0.00091	10	NB	0.000091	--
Heptachlor	0.0007	0.00055	0.00086	0.00000014	0.000009	0.0000092	0.00061	0.1	NB	0.0061	--
Heptachlor epoxide	0.027	0.0012	0.002	0.0000054	0.00002	0.000026	0.0017	8	NB	0.00021	--
Methoxychlor	0.0014	0.0012	0.00014	0.00000028	0.000013	0.000014	0.00092	4	NB	0.00023	--
Toxaphene	0.6	0.55	0.024	0.00012	0.006	0.0061	0.41	1.6	NB	0.26	--
Polychlorinated biphenyls	1.2	3.2	0.075	0.00024	0.035	0.035	2.3	0.14	0.27	17	8.7
Inorganic Analytes											
Aluminum	14,000	290	90	2.8	3.4	6.2	420	1.9	19	220	22
Antimony	0.71	0.038	0.022	0.00014	0.00049	0.00063	0.042	0.66	NB	0.064	--
Arsenic	1,100	54	0.59	0.21	0.59	0.8	53	0.13	1.3	410	41
Barium	92	1.5	1.2	0.019	0.021	0.039	2.6	5.1	20	0.51	0.13
Beryllium	0.32	0.009	0.0028	0.000064	0.00011	0.00017	0.011	0.66	NB	0.017	--
Cadmium	0.46	0.25	0.91	0.000092	0.006	0.0061	0.4	1	10	0.4	0.04
Chromium	77	0.9	0.89	0.015	0.013	0.028	1.9	3.3	69	0.57	0.027
Cobalt	7.5	0.81	0.093	0.0015	0.0091	0.011	0.71	0.5	2	1.4	0.35
Copper	110	4.1	42	0.023	0.2	0.22	15	12	15	1.2	0.97
Iron	24,000	310	170	4.8	4	8.8	590	17.9	NB	33	--
Lead	180	3.1	0.74	0.036	0.036	0.072	4.8	11	90	0.43	0.053
Manganese	230	3.1	12	0.046	0.076	0.12	8.2	88	280	0.093	0.029
Mercury	16	1.1	0.047	0.0031	0.012	0.015	1	0.032	0.16	32	6.3
Nickel	9	0.53	0.72	0.0018	0.0083	0.01	0.68	40	80	0.017	0.0084
Selenium	1.7	0.19	0.2	0.00034	0.0028	0.0031	0.21	0.2	0.33	1	0.63
Silver	4	0.17	0.53	0.0008	0.0037	0.0045	0.3	1.81	NB	0.17	--
Thallium	0.05	0.01	0.0026	0.00001	0.00012	0.00013	0.0085	0.074	0.74	0.11	0.011
Vanadium	45	0.63	0.24	0.0089	0.0077	0.017	1.1	0.21	2.1	5.3	0.53
Zinc	180	17	55	0.037	0.38	0.42	28	160	320	0.18	0.088

Footnotes on following page.

Table F-6. (cont.)

Note: Hazard quotients greater than or equal to 1.0 are boxed.

--	-	hazard quotient could not be calculated because there was no TRV available
BW	-	body weight
CoPC	-	chemical of potential concern
dw	-	dry weight
LOAEL	-	lowest-observed-adverse-effect level
NB	-	no benchmark
NOAEL	-	no-observed-adverse-effect level
PCB	-	polychlorinated biphenyl
TRV	-	toxicity reference value
ww	-	wet weight

The following data were used to develop this scenario: surface sediment and earthworm data collected at station 16 in 2004 (see Appendix Tables C-3, C-5, C-29 and C-30) and terrestrial insect data collected at the site in 2004 (see Appendix Tables C-11 and C-12). Because only one terrestrial insects composite sample was collected for the whole site, the results for this sample are used to represent insect concentrations in all site models for the short-tailed shrew.

Table F-6a. Shrew EPC calculation based on media and prey CoPC data for marsh Station 16

Medium/Prey	Survey Station	Date	Sample ID	Field Replicate	Units	Original Data/ Intermediate Calculation	Arsenic Concentration
Sediment							
	16	9/29/2004	SD0007	0	mg/kg		1,050
						Station 16 Mean	1,050
						Station 16 mean - 2 significant digits	1,100
Earthworm							
	16	9/29/2004	SD0007-EW	0	mg/kg		54.3
						Station 16 Mean	54.3
						Station 16 mean - 2 significant digits	54
Insect							
	SITE	10/7/2004	TI0001	0	mg/kg		0.59
						Site Mean	0.59

Note: Because only one terrestrial insect composite sample was collected for the whole site, the results for this sample are used to represent insect concentrations in all site models for the short-tailed shrew.

Earthworm (*Eisenia fetida*) data were from Day 28 of the bioaccumulation test for this station.

CoPC - chemical of potential concern
EPC - exposure point concentration

Table F-7. Food web model results for short-tailed shrew based on media and prey CoPC data for marsh Station 17

	Concentration			Daily Exposure				TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Earthworms (mg/kg ww)	Insects (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Pesticides/PCBs[a]											
4,4'-DDD	0.0088	0.00055	0.00055	0.0000018	0.0000079	0.0000097	0.00065	2.26	NB	0.00029	--
4,4'-DDE	0.0045	0.00055	0.00055	0.0000009	0.0000079	0.0000088	0.00059	970	NB	0.00000061	--
4,4'-DDT	0.19	0.0041	0.0041	0.000038	0.000059	0.000097	0.0065	0.05	NB	0.13	--
Aldrin	0.0011	0.00011	0.00011	0.00000022	0.0000016	0.0000018	0.00012	0.25	NB	0.00048	--
alpha-Chlordane	0.0083	0.00089	0.00089	0.0000017	0.000013	0.000014	0.00097	0.045	NB	0.021	--
alpha-Endosulfan	0.0011	0.00055	0.00055	0.00000022	0.0000079	0.0000081	0.00054	0.6	NB	0.0009	--
alpha-Hexachlorocyclohexane	0.0002	0.000085	0.000085	0.00000004	0.0000012	0.0000013	0.000084	1.3	NB	0.000065	--
beta-Endosulfan	0.006	0.0013	0.0013	0.0000012	0.000019	0.00002	0.0013	0.6	NB	0.0022	--
beta-Hexachlorocyclohexane	0.00048	0.00011	0.00011	0.000000096	0.0000016	0.0000017	0.00011	0.4	NB	0.00028	--
delta-Hexachlorocyclohexane	0.0011	0.00018	0.00018	0.00000022	0.0000026	0.0000028	0.00019	20	NB	0.0000094	--
Dieldrin	0.023	0.0014	0.0014	0.0000046	0.00002	0.000025	0.0017	0.15	NB	0.011	--
Endosulfan sulfate	0.033	0.00055	0.00055	0.0000066	0.0000079	0.000015	0.00097	NB	NB	--	--
Endrin	0.0015	0.0033	0.0033	0.0000003	0.000048	0.000048	0.0032	0.092	NB	0.035	--
Endrin aldehyde	0.011	0.00026	0.00026	0.0000022	0.0000037	0.000006	0.0004	NB	NB	--	--
Endrin ketone	0.1	0.00065	0.00065	0.00002	0.0000094	0.000029	0.002	NB	NB	--	--
gamma-Chlordane	0.16	0.0038	0.0038	0.000032	0.000055	0.000087	0.0058	0.045	NB	0.13	--
gamma-Hexachlorocyclohexane	0.0011	0.00015	0.00015	0.00000022	0.0000022	0.0000024	0.00016	10	NB	0.000016	--
Heptachlor	0.0083	0.00086	0.00086	0.0000017	0.000012	0.000014	0.00094	0.1	NB	0.0094	--
Heptachlor epoxide	0.015	0.002	0.002	0.000003	0.000029	0.000032	0.0021	8	NB	0.00027	--
Methoxychlor	0.014	0.00014	0.00014	0.0000028	0.000002	0.0000048	0.00032	4	NB	0.000081	--
Toxaphene	0.6	0.024	0.024	0.00012	0.00035	0.00047	0.031	1.6	NB	0.019	--
Polychlorinated biphenyls	7.2	0.075	0.075	0.0014	0.0011	0.0025	0.17	0.14	0.27	$\boxed{1.2}$	0.62
Inorganic Analytes											
Aluminum	5,100	440	90	1	5.1	6.1	410	1.9	19	$\boxed{210}$	$\boxed{21}$
Antimony	12	0.23	0.022	0.0024	0.0026	0.0049	0.33	0.66	NB	0.5	--
Arsenic	18,000	330	0.59	3.6	3.5	7.1	470	0.13	1.3	$\boxed{3700}$	$\boxed{370}$
Barium	100	2.6	1.2	0.021	0.032	0.053	3.5	5.1	20	0.69	0.18
Beryllium	0.24	0.013	0.0028	0.000048	0.00015	0.0002	0.013	0.66	NB	0.02	--
Cadmium	2.9	0.33	0.91	0.00059	0.0068	0.0074	0.5	1	10	0.5	0.05
Chromium	110	2.5	0.89	0.022	0.03	0.052	3.5	3.3	69	$\boxed{1}$	0.05
Cobalt	15	1.4	0.093	0.003	0.015	0.018	1.2	0.5	2	$\boxed{2.5}$	0.62
Copper	570	16	42	0.11	0.32	0.43	29	12	15	$\boxed{2.4}$	$\boxed{1.9}$
Iron	100,000	2,300	170	21	25	46	3,000	17.9	NB	$\boxed{170}$	--
Lead	280	5	0.74	0.056	0.057	0.11	7.5	11	90	0.68	0.083
Manganese	770	18	12	0.15	0.23	0.39	26	88	280	0.29	0.092
Mercury	68	1.9	0.047	0.014	0.021	0.034	2.3	0.032	0.16	$\boxed{72}$	$\boxed{14}$
Nickel	77	2.9	0.72	0.015	0.034	0.049	3.3	40	80	0.082	0.041
Selenium	7.2	0.24	0.2	0.0014	0.0033	0.0047	0.32	0.2	0.33	$\boxed{1.6}$	0.96
Silver	12	0.43	0.53	0.0025	0.0066	0.009	0.6	1.81	NB	0.33	--
Thallium	0.093	0.016	0.0026	0.000019	0.00018	0.0002	0.013	0.074	0.74	0.18	0.018
Vanadium	61	1.5	0.24	0.012	0.017	0.029	2	0.21	2.1	$\boxed{9.3}$	0.93
Zinc	480	32	55	0.096	0.54	0.64	42	160	320	0.27	0.13

Footnotes on following page.

Table F-7. (cont.)

Note: Hazard quotients greater than or equal to 1.0 are boxed.

--	-	hazard quotient could not be calculated because there was no TRV available
BW	-	body weight
CoPC	-	chemical of potential concern
dw	-	dry weight
LOAEL	-	lowest-observed-adverse-effect level
NB	-	no benchmark
NOAEL	-	no-observed-adverse-effect level
PCB	-	polychlorinated biphenyl
TRV	-	toxicity reference value
ww	-	wet weight

The following data were used to develop this scenario: surface sediment and earthworm data collected at station 17 in 2004 (see Appendix Tables C-3, C-5 and C-30) and terrestrial insect data collected at the site in 2004 (see Appendix Tables C-11 and C-12). Because only one terrestrial insects composite sample was collected for the whole site, the results for this sample are used to represent insect concentrations in all site models for the short-tailed shrew.

[a] Pesticides/PCBs were not analyzed in earthworms at this station, and therefore insect concentrations were used as surrogate values for calculations.

Table F-8. Food web model results for short-tailed shrew based on media and prey CoPC data for marsh Station 18A

Analyte	Concentration: Sediment (mg/kg dw)	Concentration: Earthworms (mg/kg ww)	Concentration: Insects (mg/kg ww)	Daily Exposure: Sediment (mg/day)	Daily Exposure: Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV: NOAEL (mg/kg-day)	TRV: LOAEL (mg/kg-day)	Hazard Quotient: NOAEL Hazard Quotient	Hazard Quotient: LOAEL Hazard Quotient
Pesticides/PCBs											
4,4'-DDD	0.00085	0.00016	0.00055	0.00000017	0.0000037	0.0000039	0.00026	2.26	NB	0.00011	--
4,4'-DDE	0.0003	0.0012	0.00055	0.00000006	0.000015	0.000015	0.001	970	NB	0.000001	--
4,4'-DDT	0.0067	0.0026	0.0041	0.0000013	0.000043	0.000044	0.0029	0.05	NB	0.059	--
Aldrin	0.00015	0.0019	0.00011	0.00000003	0.000021	0.000021	0.0014	0.25	NB	0.0056	--
alpha-Chlordane	0.0003	0.00042	0.00089	0.00000006	0.0000077	0.0000078	0.00052	0.045	NB	0.012	--
alpha-Endosulfan	0.0021	0.00076	0.00055	0.00000042	0.00001	0.000011	0.00071	0.6	NB	0.0012	--
alpha-Hexachlorocyclohexane	0.00005	0.0016	0.000085	0.00000001	0.000018	0.000018	0.0012	1.3	NB	0.0009	--
beta-Endosulfan	0.0023	0.0016	0.0013	0.00000046	0.000022	0.000022	0.0015	0.6	NB	0.0025	--
beta-Hexachlorocyclohexane	0.0026	0.0012	0.00011	0.00000052	0.000013	0.000014	0.00093	0.4	NB	0.0023	--
delta-Hexachlorocyclohexane	0.000085	0.0012	0.00018	0.000000017	0.000014	0.000014	0.00091	20	NB	0.000045	--
Dieldrin	0.003	0.00013	0.0014	0.0000006	0.0000064	0.000007	0.00047	0.15	NB	0.0031	--
Endosulfan sulfate	0.00013	0.0012	0.00055	0.000000026	0.000015	0.000015	0.001	NB	NB	--	--
Endrin	0.0018	0.0012	0.0033	0.00000036	0.000025	0.000025	0.0017	0.092	NB	0.018	--
Endrin aldehyde	0.000095	0.0002	0.00026	0.000000019	0.0000031	0.0000031	0.00021	NB	NB	--	--
Endrin ketone	0.0009	0.00034	0.00065	0.00000018	0.000006	0.0000062	0.00041	NB	NB	--	--
gamma-Chlordane	0.00035	0.0014	0.0038	0.00000007	0.000029	0.000029	0.0019	0.045	NB	0.043	--
gamma-Hexachlorocyclohexane	0.00078	0.00033	0.00015	0.00000016	0.0000041	0.0000043	0.00028	10	NB	0.000028	--
Heptachlor	0.000085	0.00055	0.00086	0.000000017	0.000009	0.0000091	0.0006	0.1	NB	0.006	--
Heptachlor epoxide	0.00055	0.0013	0.002	0.00000011	0.000021	0.000021	0.0014	8	NB	0.00018	--
Methoxychlor	0.0015	0.0074	0.00014	0.0000003	0.00008	0.000081	0.0054	4	NB	0.0013	--
Toxaphene	0.06	0.055	0.024	0.000012	0.00068	0.00069	0.046	1.6	NB	0.029	--
Polychlorinated biphenyls	0.1	0.24	0.075	0.00002	0.0029	0.0029	0.19	0.14	0.27	1.4	0.71
Inorganic Analytes											
Aluminum	6,300	680	90	1.3	7.7	9	600	1.9	19	310	31
Antimony	0.5	0.02	0.022	0.0001	0.0003	0.0004	0.026	0.66	NB	0.04	--
Arsenic	12	3.8	0.59	0.0024	0.043	0.046	3	0.13	1.3	23	2.3
Barium	32	1.6	1.2	0.0064	0.022	0.028	1.9	5.1	20	0.37	0.093
Beryllium	0.3	0.019	0.0028	0.00006	0.00022	0.00028	0.018	0.66	NB	0.028	--
Cadmium	0.091	0.27	0.91	0.000018	0.0062	0.0062	0.41	1	10	0.41	0.041
Chromium	78	2.5	0.89	0.016	0.03	0.046	3.1	3.3	69	0.93	0.044
Cobalt	2.2	1.1	0.093	0.00045	0.012	0.013	0.84	0.5	2	1.7	0.42
Copper	60	3.1	42	0.012	0.18	0.2	13	12	15	1.1	0.87
Iron	56,000	660	170	11	7.7	19	1,300	17.9	NB	70	--
Lead	140	27	0.74	0.029	0.29	0.32	22	11	90	2	0.24
Manganese	57	3.3	12	0.012	0.078	0.09	6	88	280	0.068	0.021
Mercury	0.42	0.15	0.047	0.000084	0.0018	0.0019	0.12	0.032	0.16	3.9	0.78
Nickel	2.6	0.53	0.72	0.00052	0.0083	0.0088	0.59	40	80	0.015	0.0074
Selenium	0.6	0.18	0.2	0.00012	0.0027	0.0028	0.19	0.2	0.33	0.93	0.56
Silver	4.8	0.36	0.53	0.00097	0.0058	0.0068	0.45	1.81	NB	0.25	--
Thallium	0.051	0.022	0.0026	0.00001	0.00025	0.00026	0.017	0.074	0.74	0.23	0.023
Vanadium	53	1	0.24	0.011	0.012	0.022	1.5	0.21	2.1	7.1	0.71
Zinc	51	15	55	0.01	0.36	0.37	25	160	320	0.15	0.077

Footnotes on following page.

Table F-8. (cont.)

Note: Hazard quotients greater than or equal to 1.0 are boxed.

--	-	hazard quotient could not be calculated because there was no TRV available
BW	-	body weight
CoPC	-	chemical of potential concern
dw	-	dry weight
LOAEL	-	lowest-observed-adverse-effect level
NB	-	no benchmark
NOAEL	-	no-observed-adverse-effect level
PCB	-	polychlorinated biphenyl
TRV	-	toxicity reference value
ww	-	wet weight

The following data were used to develop this scenario: surface sediment and earthworm data collected at station 18A in 2004 (see Appendix Tables C-3, C-5, C-29 and C-30) and terrestrial insect data collected at the site in 2004 (see Appendix Tables C-11 and C-12). Because only one terrestrial insects composite sample was collected for the whole site, the results for this sample are used to represent insect concentrations in all site models for the short-tailed shrew.

Table F-9. Food web model results for short-tailed shrew based on media and prey CoPC data for marsh Station 19

Analyte	Concentration: Sediment (mg/kg dw)	Concentration: Earthworms (mg/kg ww)	Concentration: Insects (mg/kg ww)	Daily Exposure: Sediment (mg/day)	Daily Exposure: Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV: NOAEL (mg/kg-day)	TRV: LOAEL (mg/kg-day)	Hazard Quotient: NOAEL Hazard Quotient	Hazard Quotient: LOAEL Hazard Quotient
Pesticides/PCBs											
4,4'-DDD	0.00095	0.00017	0.00055	0.00000019	0.0000038	0.000004	0.00027	2.26	NB	0.00012	--
4,4'-DDE	0.0013	0.0015	0.00055	0.00000026	0.000018	0.000018	0.0012	970	NB	0.0000013	--
4,4'-DDT	0.038	0.0091	0.0041	0.0000076	0.00011	0.00012	0.008	0.05	NB	0.16	--
Aldrin	0.007	0.00085	0.00011	0.0000014	0.0000096	0.000011	0.00073	0.25	NB	0.0029	--
alpha-Chlordane	0.0028	0.00046	0.00089	0.00000056	0.0000082	0.0000087	0.00058	0.045	NB	0.013	--
alpha-Endosulfan	0.0065	0.00017	0.00055	0.0000013	0.0000038	0.0000051	0.00034	0.6	NB	0.00057	--
alpha-Hexachlorocyclohexane	0.00036	0.001	0.000085	0.000000072	0.000011	0.000011	0.00075	1.3	NB	0.00057	--
beta-Endosulfan	0.00095	0.00044	0.0013	0.00000019	0.0000094	0.0000096	0.00064	0.6	NB	0.0011	--
beta-Hexachlorocyclohexane	0.0015	0.0013	0.00011	0.0000003	0.000014	0.000015	0.00098	0.4	NB	0.0025	--
delta-Hexachlorocyclohexane	0.00026	0.0008	0.00018	0.000000052	0.0000093	0.0000093	0.00062	20	NB	0.000031	--
Dieldrin	0.0017	0.00014	0.0014	0.00000034	0.0000066	0.0000069	0.00046	0.15	NB	0.0031	--
Endosulfan sulfate	0.00038	0.00034	0.00055	0.000000076	0.0000057	0.0000057	0.00038	NB	NB	--	--
Endrin	0.00095	0.0013	0.0033	0.00000019	0.000026	0.000026	0.0017	0.092	NB	0.019	--
Endrin aldehyde	0.0066	0.0013	0.00026	0.0000013	0.000015	0.000016	0.0011	NB	NB	--	--
Endrin ketone	0.0084	0.00037	0.00065	0.0000017	0.0000063	0.000008	0.00053	NB	NB	--	--
gamma-Chlordane	0.015	0.0053	0.0038	0.000003	0.000071	0.000074	0.0049	0.045	NB	0.11	--
gamma-Hexachlorocyclohexane	0.00018	0.0013	0.00015	0.000000036	0.000015	0.000015	0.00097	10	NB	0.000097	--
Heptachlor	0.0002	0.0006	0.00086	0.00000004	0.0000096	0.0000096	0.00064	0.1	NB	0.0064	--
Heptachlor epoxide	0.0015	0.0013	0.002	0.0000003	0.000021	0.000022	0.0014	8	NB	0.00018	--
Methoxychlor	0.032	0.0048	0.00014	0.0000064	0.000052	0.000059	0.0039	4	NB	0.00098	--
Toxaphene	0.28	0.075	0.024	0.000056	0.0009	0.00095	0.064	1.6	NB	0.04	--
Polychlorinated biphenyls	1.4	0.35	0.075	0.00028	0.0041	0.0043	0.29	0.14	0.27	2.1	1.1
Inorganic Analytes											
Aluminum	14,000	730	90	2.9	8.3	11	740	1.9	19	390	39
Antimony	0.92	0.034	0.022	0.00018	0.00045	0.00063	0.042	0.66	NB	0.064	--
Arsenic	17	2.9	0.59	0.0033	0.033	0.037	2.5	0.13	1.3	19	1.9
Barium	64	1.7	1.2	0.013	0.023	0.036	2.4	5.1	20	0.46	0.12
Beryllium	0.72	0.024	0.0028	0.00014	0.00027	0.00041	0.028	0.66	NB	0.042	--
Cadmium	0.86	0.35	0.91	0.00017	0.0071	0.0072	0.48	1	10	0.48	0.048
Chromium	310	3.7	0.89	0.062	0.043	0.11	7	3.3	69	2.1	0.1
Cobalt	5.2	1.3	0.093	0.001	0.014	0.015	1	0.5	2	2.1	0.51
Copper	1,100	38	42	0.23	0.56	0.79	53	12	15	4.4	3.5
Iron	29,000	410	170	5.9	5	11	730	17.9	NB	41	--
Lead	340	4.4	0.74	0.068	0.05	0.12	7.9	11	90	0.71	0.087
Manganese	160	6.6	12	0.031	0.11	0.15	9.7	88	280	0.11	0.035
Mercury	8.9	0.8	0.047	0.0018	0.0088	0.011	0.71	0.032	0.16	22	4.4
Nickel	15	1.3	0.72	0.003	0.017	0.02	1.3	40	80	0.033	0.016
Selenium	1.3	0.36	0.2	0.00026	0.0046	0.0049	0.32	0.2	0.33	1.6	0.98
Silver	130	1.1	0.53	0.027	0.014	0.041	2.7	1.81	NB	1.5	--
Thallium	0.13	0.027	0.0026	0.000026	0.0003	0.00033	0.022	0.074	0.74	0.29	0.029
Vanadium	35	0.79	0.24	0.0071	0.0094	0.016	1.1	0.21	2.1	5.2	0.52
Zinc	150	21	55	0.03	0.42	0.45	30	160	320	0.19	0.094

Footnotes on following page.

Table F-9. (cont.)

Note: Hazard quotients greater than or equal to 1.0 are boxed.

--	-	hazard quotient could not be calculated because there was no TRV available
BW	-	body weight
CoPC	-	chemical of potential concern
dw	-	dry weight
LOAEL	-	lowest-observed-adverse-effect level
NB	-	no benchmark
NOAEL	-	no-observed-adverse-effect level
PCB	-	polychlorinated biphenyl
TRV	-	toxicity reference value
ww	-	wet weight

The following data were used to develop this scenario: surface sediment and earthworm data collected at station 19 in 2004 (see Appendix Tables C-3, C-5, C-29 and C-30) and terrestrial insect data collected at the site in 2004 (see Appendix Tables C-11 and C-12). Because only one terrestrial insects composite sample was collected for the whole site, the results for this sample are used to represent insect concentrations in all site models for the short-tailed shrew.

Table F-10. Food web model results for short-tailed shrew based on media and prey CoPC data for marsh Station 22

	Concentration			Daily Exposure			BW	TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Earthworms (mg/kg ww)	Insects (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	Normalized Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Pesticides/PCBs											
4,4'-DDD	0.0032	0.002	0.00055	0.00000064	0.000024	0.000024	0.0016	2.26	NB	0.00071	--
4,4'-DDE	0.00048	0.0011	0.00055	0.000000096	0.000014	0.000014	0.00093	970	NB	0.00000096	--
4,4'-DDT	0.44	0.09	0.0041	0.000088	0.00099	0.0011	0.072	0.05	NB	1.4	--
Aldrin	0.0065	0.0011	0.00011	0.0000013	0.000012	0.000014	0.00091	0.25	NB	0.0036	--
alpha-Chlordane	0.014	0.0065	0.00089	0.0000028	0.000073	0.000076	0.0051	0.045	NB	0.11	--
alpha-Endosulfan	0.016	0.041	0.00055	0.0000032	0.00044	0.00045	0.03	0.6	NB	0.05	--
alpha-Hexachlorocyclohexane	0.00055	0.00065	0.000085	0.00000011	0.0000073	0.0000074	0.0005	1.3	NB	0.00038	--
beta-Endosulfan	0.0042	0.0011	0.0013	0.00000084	0.000017	0.000017	0.0012	0.6	NB	0.0019	--
beta-Hexachlorocyclohexane	0.0032	0.0019	0.00011	0.00000064	0.000021	0.000022	0.0014	0.4	NB	0.0036	--
delta-Hexachlorocyclohexane	0.0085	0.0023	0.00018	0.0000017	0.000025	0.000027	0.0018	20	NB	0.000091	--
Dieldrin	0.048	0.0011	0.0014	0.0000096	0.000017	0.000027	0.0018	0.15	NB	0.012	--
Endosulfan sulfate	0.0014	0.0011	0.00055	0.00000028	0.000014	0.000014	0.00094	NB	NB	--	--
Endrin	0.0032	0.0014	0.0033	0.00000064	0.000027	0.000028	0.0018	0.092	NB	0.02	--
Endrin aldehyde	0.03	0.0069	0.00026	0.000006	0.000075	0.000081	0.0054	NB	NB	--	--
Endrin ketone	0.011	0.0011	0.00065	0.0000022	0.000014	0.000016	0.0011	NB	NB	--	--
gamma-Chlordane	0.79	0.18	0.0038	0.00016	0.002	0.0021	0.14	0.045	NB	3.1	--
gamma-Hexachlorocyclohexane	0.014	0.011	0.00015	0.0000028	0.00012	0.00012	0.0081	10	NB	0.00081	--
Heptachlor	0.0032	0.0011	0.00086	0.00000064	0.000015	0.000016	0.001	0.1	NB	0.01	--
Heptachlor epoxide	0.0065	0.098	0.002	0.0000013	0.0011	0.0011	0.071	8	NB	0.0089	--
Methoxychlor	0.023	0.0011	0.00014	0.0000046	0.000012	0.000017	0.0011	4	NB	0.00028	--
Toxaphene	1.8	0.32	0.024	0.00036	0.0035	0.0039	0.26	1.6	NB	0.16	--
Polychlorinated biphenyls	20	9.3	0.075	0.004	0.1	0.1	7.0	0.14	0.27	50	26
Inorganic Analytes											
Aluminum	7,700	720	90	1.5	8.1	9.7	650	1.9	19	340	34
Antimony	0.79	0.025	0.022	0.00016	0.00035	0.00051	0.034	0.66	NB	0.051	--
Arsenic	34	4.3	0.59	0.0069	0.049	0.055	3.7	0.13	1.3	28	2.8
Barium	130	2.4	1.2	0.026	0.03	0.056	3.7	5.1	20	0.73	0.19
Beryllium	0.44	0.016	0.0028	0.000088	0.00018	0.00027	0.018	0.66	NB	0.027	--
Cadmium	4.3	0.63	0.91	0.00087	0.01	0.011	0.73	1	10	0.73	0.073
Chromium	280	5.1	0.89	0.056	0.058	0.11	7.6	3.3	69	2.3	0.11
Cobalt	8.5	0.98	0.093	0.0017	0.011	0.013	0.84	0.5	2	1.7	0.42
Copper	490	12	42	0.098	0.28	0.38	25	12	15	2.1	1.7
Iron	48,000	760	170	9.6	8.8	18	1,200	17.9	NB	69	--
Lead	320	3.7	0.74	0.064	0.043	0.11	7.1	11	90	0.65	0.079
Manganese	290	4.7	12	0.058	0.094	0.15	10	88	280	0.11	0.036
Mercury	11	0.54	0.047	0.0021	0.006	0.0081	0.54	0.032	0.16	17	3.4
Nickel	44	1.1	0.72	0.0088	0.014	0.023	1.6	40	80	0.039	0.019
Selenium	0.7	0.32	0.2	0.00014	0.0042	0.0043	0.29	0.2	0.33	1.4	0.87
Silver	6.5	0.16	0.53	0.0013	0.0036	0.0049	0.33	1.81	NB	0.18	--
Thallium	0.085	0.019	0.0026	0.000017	0.00021	0.00023	0.015	0.074	0.74	0.21	0.021
Vanadium	32	0.88	0.24	0.0065	0.01	0.017	1.1	0.21	2.1	5.3	0.53
Zinc	180	15	55	0.037	0.36	0.39	26	160	320	0.16	0.082

Footnotes on following page.

Table F-10. (cont.)

Note: Hazard quotients greater than or equal to 1.0 are boxed.

--	-	hazard quotient could not be calculated because there was no TRV available
BW	-	body weight
CoPC	-	chemical of potential concern
dw	-	dry weight
LOAEL	-	lowest-observed-adverse-effect level
NB	-	no benchmark
NOAEL	-	no-observed-adverse-effect level
PCB	-	polychlorinated biphenyl
TRV	-	toxicity reference value
ww	-	wet weight

The following data were used to develop this scenario: surface sediment and earthworm data collected at station 22 in 2004 (see Appendix Tables C-3, C-5, C-29 and C-30) and terrestrial insect data collected at the site in 2004 (see Appendix Tables C-11 and C-12). Because only one terrestrial insects composite sample was collected for the whole site, the results for this sample are used to represent insect concentrations in all site models for the short-tailed shrew.

Table F-11. Food web model results for short-tailed shrew based on media and prey CoPC data for marsh reference Station TERRREF1

Analyte	Concentration: Sediment (mg/kg dw)	Concentration: Earthworms (mg/kg ww)	Concentration: Insects (mg/kg ww)	Daily Exposure: Sediment (mg/day)	Daily Exposure: Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV: NOAEL (mg/kg-day)	TRV: LOAEL (mg/kg-day)	Hazard Quotient: NOAEL Hazard Quotient	Hazard Quotient: LOAEL Hazard Quotient
Semivolatiles Organic Compounds[a]											
2,4,5-Trichlorophenol	0.0023	0.11	0.11	0.00000046	0.0016	0.0016	0.11	100	NB	0.0011	--
2,4,6-Trichlorophenol	0.0014	0.09	0.09	0.00000028	0.0013	0.0013	0.086	NB	NB	--	--
2,4-Dichlorophenol	0.0014	0.12	0.12	0.00000028	0.0017	0.0017	0.12	0.3	NB	0.38	--
2,4-Dimethylphenol	0.0041	0.13	0.13	0.00000082	0.0019	0.0019	0.12	50	NB	0.0025	--
2,4-Dinitrophenol	0.027	0.23	0.23	0.0000054	0.0033	0.0033	0.22	NB	NB	--	--
2,4-Dinitrotoluene	0.0021	0.085	0.085	0.00000042	0.0012	0.0012	0.082	0.2	NB	0.41	--
2,6-Dinitrotoluene	0.0021	0.07	0.07	0.00000042	0.001	0.001	0.067	3.54	NB	0.019	--
2-Chloronaphthalene	0.0027	0.06	0.06	0.00000054	0.00086	0.00086	0.058	250	NB	0.00023	--
2-Chlorophenol	0.0013	0.11	0.11	0.00000026	0.0016	0.0016	0.11	5	NB	0.021	--
2-Methyl-4,6-dinitrophenol	0.0013	0.15	0.15	0.00000026	0.0022	0.0022	0.14	0.42	NB	0.34	--
2-Methylnaphthalene	0.0063	0.0015	0.0015	0.0000013	0.000022	0.000023	0.0015	5	NB	0.0003	--
2-Methylphenol	0.0025	0.55	0.55	0.0000005	0.0079	0.0079	0.53	50	NB	0.011	--
2-Nitroaniline	0.002	0.26	0.26	0.0000004	0.0037	0.0037	0.25	71.2	NB	0.0035	--
2-Nitrophenol	0.002	0.15	0.15	0.0000004	0.0022	0.0022	0.14	6.68	NB	0.022	--
3,3'-Dichlorobenzidine	0.0028	8	8	0.00000056	0.12	0.12	7.7	NB	NB	--	--
3-Nitroaniline	0.002	0.09	0.09	0.0000004	0.0013	0.0013	0.086	18	NB	0.0048	--
4-Bromophenyl ether	0.0011	0.055	0.055	0.00000022	0.00079	0.00079	0.053	NB	NB	--	--
4-Chloro-3-methylphenol	0.0016	0.75	0.75	0.00000032	0.011	0.011	0.72	14.2	NB	0.051	--
4-Chloroaniline	0.0016	0.06	0.06	0.00000032	0.00086	0.00086	0.058	1.25	NB	0.046	--
4-Chlorophenyl-phenyl ether	0.0015	0.045	0.045	0.0000003	0.00065	0.00065	0.043	NB	NB	--	--
4-Methylphenol	0.0022	0.15	0.15	0.00000044	0.0022	0.0022	0.14	NB	NB	--	--
4-Nitroaniline	0.0025	0.26	0.26	0.0000005	0.0037	0.0037	0.25	NB	NB	--	--
4-Nitrophenol	0.023	0.075	0.075	0.0000046	0.0011	0.0011	0.072	NB	NB	--	--
Acenaphthene	0.0035	0.00051	0.00051	0.0000007	0.0000073	0.000008	0.00054	175	NB	0.0000031	--
Acenaphthylene	0.013	0.0014	0.0014	0.0000026	0.00002	0.000023	0.0015	NB	NB	--	--
Acetophenone	0.009	0.2	0.2	0.0000018	0.0029	0.0029	0.19	423	NB	0.00045	--
Anthracene	0.015	0.0018	0.0018	0.000003	0.000026	0.000029	0.0019	1000	NB	0.0000019	--
Atrazine	0.0017	0.055	0.055	0.00000034	0.00079	0.00079	0.053	3.5	NB	0.015	--
Benz[a]anthracene	0.066	0.0055	0.0055	0.000013	0.000079	0.000092	0.0062	NB	NB	--	--
Benzaldehyde	0.0065	7.5	7.5	0.0000013	0.11	0.11	7.2	143	NB	0.05	--
Benzo[a]pyrene	0.083	0.0056	0.0056	0.000017	0.000081	0.000097	0.0065	1	NB	0.0065	--
Benzo[b]fluoranthene	0.11	0.0066	0.0066	0.000022	0.000095	0.00012	0.0078	NB	NB	--	--
Benzo[ghi]perylene	0.058	0.0042	0.0042	0.000012	0.00006	0.000072	0.0048	NB	NB	--	--
Benzo[k]fluoranthene	0.043	0.0066	0.0066	0.0000086	0.000095	0.0001	0.0069	NB	NB	--	--
Biphenyl	0.0036	0.047	0.047	0.00000072	0.00068	0.00068	0.045	50	NB	0.0009	--
bis[2-chloroethoxy]methane	0.001	0.05	0.05	0.0000002	0.00072	0.00072	0.048	13	NB	0.0037	--
bis[2-chloroethyl]ether	0.0018	0.09	0.09	0.00000036	0.0013	0.0013	0.086	1.5	NB	0.058	--
Bis[2-chloroisopropyl]ether	0.0009	0.11	0.11	0.00000018	0.0016	0.0016	0.11	35.8	NB	0.003	--
bis[2-Ethylhexyl]phthalate	0.17	0.55	0.55	0.000034	0.0079	0.008	0.53	3.5	NB	0.15	--
Butylbenzyl phthalate	0.013	0.14	0.14	0.0000026	0.002	0.002	0.13	159	NB	0.00085	--
Caprolactam	0.009	0.13	0.13	0.0000018	0.0019	0.0019	0.12	50	NB	0.0025	--
Carbazole	0.0069	0.33	0.33	0.0000014	0.0048	0.0048	0.32	10	NB	0.032	--
Chrysene	0.091	0.0096	0.0096	0.000018	0.00014	0.00016	0.01	NB	NB	--	--
Dibenz[a,h]anthracene	0.015	0.0011	0.0011	0.000003	0.000016	0.000019	0.0013	NB	NB	--	--

Table F-11. (cont.)

	Concentration			Daily Exposure				TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Earthworms (mg/kg ww)	Insects (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Dibenzofuran	0.0031	0.00066	0.00066	0.00000062	0.0000095	0.00001	0.00068	12.5	NB	0.000054	--
Diethyl phthalate	0.0026	0.095	0.095	0.00000052	0.0014	0.0014	0.091	4,580	NB	0.00002	--
Dimethyl phthalate	0.0014	0.055	0.055	0.00000028	0.00079	0.00079	0.053	48	NB	0.0011	--
Di-n-butyl phthalate	0.014	0.29	0.29	0.0000028	0.0042	0.0042	0.28	550	NB	0.00051	--
Di-n-octyl phthalate	0.0027	0.13	0.13	0.00000054	0.0019	0.0019	0.12	17.5	NB	0.0071	--
Fluoranthene	0.17	0.01	0.01	0.000034	0.00014	0.00018	0.012	125	NB	0.000095	--
Fluorene	0.0046	0.0012	0.0012	0.00000092	0.000017	0.000018	0.0012	125	NB	0.0000097	--
Hexachlorobenzene	0.0016	0.06	0.06	0.00000032	0.00086	0.00086	0.058	0.08	NB	0.72	--
Hexachlorobutadiene	0.0011	0.085	0.085	0.00000022	0.0012	0.0012	0.082	1.74	NB	0.047	--
Hexachlorocyclopentadiene	0.012	50	50	0.0000024	0.72	0.72	48	7	NB	6.9	--
Hexachloroethane	0.0017	0.085	0.085	0.00000034	0.0012	0.0012	0.082	1	NB	0.082	--
Indeno[1,2,3-cd]pyrene	0.061	0.0045	0.0045	0.000012	0.000065	0.000077	0.0051	NB	NB	--	--
Isophorone	0.0012	0.06	0.06	0.00000024	0.00086	0.00086	0.058	150	NB	0.00038	--
Naphthalene	0.0089	0.0027	0.0027	0.0000018	0.000039	0.000041	0.0027	71	NB	0.000038	--
Nitrobenzene	0.0015	0.1	0.1	0.0000003	0.0014	0.0014	0.096	12	NB	0.008	--
N-nitroso-di-n-propylamine	0.0024	0.085	0.085	0.00000048	0.0012	0.0012	0.082	9.6	NB	0.0085	--
N-nitrosodiphenylamine	0.0017	0.095	0.095	0.00000034	0.0014	0.0014	0.091	NB	NB	--	--
Pentachlorophenol	0.0065	0.31	0.31	0.0000013	0.0045	0.0045	0.3	3	NB	0.099	--
Phenanthrene	0.059	0.0055	0.0055	0.000012	0.000079	0.000091	0.0061	14	NB	0.00043	--
Phenol	0.003	0.17	0.17	0.0000006	0.0024	0.0024	0.16	60	NB	0.0027	--
Pyrene	0.12	0.01	0.01	0.000024	0.00014	0.00017	0.011	75	NB	0.00015	--
Total PAHs	0.88	0.077	0.077	0.00018	0.0011	0.0013	0.086	1	10	0.086	0.0086
Pesticides/PCBs											
4,4'-DDD	0.0027	0.00014	0.0024	0.00000054	0.00001	0.000011	0.00071	2.26	NB	0.00032	--
4,4'-DDE	0.0057	0.0023	0.0011	0.0000011	0.000029	0.00003	0.002	970	NB	0.0000021	--
4,4'-DDT	0.024	0.004	0.0012	0.0000048	0.000048	0.000052	0.0035	0.05	NB	0.07	--
Aldrin	0.00019	0.00021	0.00021	0.000000038	0.000003	0.0000031	0.0002	0.25	NB	0.00082	--
alpha-Chlordane	0.0022	0.0022	0.001	0.00000044	0.000027	0.000028	0.0019	0.045	NB	0.041	--
alpha-Endosulfan	0.00055	0.0011	0.0011	0.00000011	0.000016	0.000016	0.0011	0.6	NB	0.0018	--
alpha-Hexachlorocyclohexane	0.00023	0.00017	0.00017	0.000000046	0.0000024	0.0000025	0.00017	1.3	NB	0.00013	--
beta-Endosulfan	0.0016	0.00037	0.0011	0.00000032	0.000008	0.0000083	0.00055	0.6	NB	0.00092	--
beta-Hexachlorocyclohexane	0.002	0.0009	0.00022	0.0000004	0.000011	0.000011	0.00073	0.4	NB	0.0018	--
delta-Hexachlorocyclohexane	0.00039	0.00036	0.00035	0.000000078	0.0000051	0.0000052	0.00035	20	NB	0.000017	--
Dieldrin	0.0012	0.0009	0.0011	0.00000024	0.000014	0.000014	0.00093	0.15	NB	0.0062	--
Endosulfan sulfate	0.00016	0.00029	0.00034	0.000000032	0.0000044	0.0000044	0.00029	NB	NB	--	--
Endrin	0.00018	0.0011	0.0011	0.000000036	0.000016	0.000016	0.0011	0.092	NB	0.012	--
Endrin aldehyde	0.0007	0.00018	0.0008	0.00000014	0.0000048	0.000005	0.00033	NB	NB	--	--
Endrin ketone	0.0059	0.00031	0.00095	0.0000012	0.0000068	0.000008	0.00053	NB	NB	--	--
gamma-Chlordane	0.0027	0.0032	0.0011	0.00000054	0.000039	0.000039	0.0026	0.045	NB	0.058	--
gamma-Hexachlorocyclohexane	0.000075	0.0033	0.00029	0.000000015	0.000037	0.000037	0.0024	10	NB	0.00024	--
Heptachlor	0.000075	0.00047	0.00046	0.000000015	0.0000067	0.0000067	0.00045	0.1	NB	0.0045	--
Heptachlor epoxide	0.00044	0.0018	0.0011	0.000000088	0.000023	0.000023	0.0016	8	NB	0.0002	--
Methoxychlor	0.003	0.0013	0.0011	0.0000006	0.000018	0.000019	0.0012	4	NB	0.00031	--
Toxaphene	0.039	0.046	0.12	0.0000078	0.00093	0.00094	0.062	1.6	NB	0.039	--
Polychlorinated biphenyls	0.28	0.18	0.0048	0.000056	0.002	0.002	0.13	0.14	0.27	0.96	0.5

Table F-11. (cont.)

Analyte	Concentration: Sediment (mg/kg dw)	Concentration: Earthworms (mg/kg ww)	Concentration: Insects (mg/kg ww)	Daily Exposure: Sediment (mg/day)	Daily Exposure: Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV: NOAEL (mg/kg-day)	TRV: LOAEL (mg/kg-day)	Hazard Quotient: NOAEL Hazard Quotient	Hazard Quotient: LOAEL Hazard Quotient
Inorganic Analytes											
Aluminum	12,000	560	17	2.4	6.1	8.5	560	1.9	19	300	30
Antimony	0.64	0.029	0.0062	0.00013	0.00034	0.00046	0.031	0.66	NB	0.047	--
Arsenic	39	2.8	0.065	0.0078	0.03	0.038	2.6	0.13	1.3	20	2
Barium	59	2.1	1.4	0.012	0.028	0.039	2.6	5.1	20	0.52	0.13
Beryllium	1.3	0.032	0.0011	0.00026	0.00035	0.00061	0.041	0.66	NB	0.062	--
Cadmium	1.4	1.1	0.34	0.00028	0.013	0.013	0.89	1	10	0.89	0.089
Chromium	60	1.7	0.4	0.012	0.02	0.032	2.1	3.3	69	0.64	0.031
Cobalt	16	0.87	0.027	0.0032	0.0095	0.013	0.84	0.5	2	1.7	0.42
Copper	230	7.5	23	0.045	0.16	0.21	14	12	15	1.2	0.92
Iron	22,000	520	42	4.5	5.8	10	680	17.9	NB	38	--
Lead	170	4.6	0.19	0.034	0.05	0.084	5.6	11	90	0.51	0.062
Manganese	680	13	9.4	0.14	0.18	0.31	21	88	280	0.24	0.074
Mercury	0.76	0.092	0.019	0.00015	0.0011	0.0012	0.081	0.032	0.16	2.5	0.51
Nickel	13	0.97	0.24	0.0026	0.011	0.014	0.93	40	80	0.023	0.012
Selenium	3.3	0.15	0.21	0.00065	0.0024	0.003	0.2	0.2	0.33	1	0.61
Silver	3.8	0.18	0.078	0.00077	0.0022	0.003	0.2	1.81	NB	0.11	--
Thallium	0.12	0.015	0.00093	0.000024	0.00017	0.00019	0.013	0.074	0.74	0.17	0.017
Vanadium	49	1.4	0.093	0.0098	0.015	0.025	1.7	0.21	2.1	8	0.8
Zinc	260	17	51	0.053	0.36	0.41	28	160	320	0.17	0.086

Note: Hazard quotients greater than or equal to 1.0 are boxed.

- -- - hazard quotient could not be calculated because there was no TRV available
- BW - body weight
- CoPC - chemical of potential concern
- dw - dry weight
- LOAEL - lowest-observed-adverse-effect level
- NB - no benchmark
- NOAEL - no-observed-adverse-effect level
- PAH - polycyclic aromatic hydrocarbon
- PCB - polychlorinated biphenyl
- TRV - toxicity reference value
- ww - wet weight

The following data were used to develop this scenario: surface sediment and earthworm data collected at terrestrial reference station 1 in 2004 (see Appendix Tables C-2, C-3, C-5, C-28, C-29 and C-30) and terrestrial insect data collected at the site in 2004 (see Appendix Tables C-11 and C-12). Because only one terrestrial insects composite sample was collected for the whole reference site, the results for this sample are used to represent insect concentrations in all reference models for the short-tailed shrew.

[a] Semivolatile organic compounds were not analyzed in insects, and earthworm concentrations were used as surrogate values for calculations.

Table F-12. Food web model results for short-tailed shrew based on media and prey CoPC data for marsh reference Station TERRREF2

	Concentration			Daily Exposure				TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Earthworms (mg/kg ww)	Insects (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Pesticides/PCBs											
4,4'-DDD	0.0014	0.00075	0.0024	0.00000028	0.000017	0.000017	0.0011	2.26	NB	0.0005	--
4,4'-DDE	0.0027	0.00075	0.0011	0.00000054	0.000012	0.000013	0.00084	970	NB	0.00000087	--
4,4'-DDT	0.012	0.0078	0.0012	0.0000024	0.000089	0.000091	0.0061	0.05	NB	0.12	--
Aldrin	0.00021	0.00075	0.00021	0.000000042	0.0000089	0.0000089	0.00059	0.25	NB	0.0024	--
alpha-Chlordane	0.0016	0.0019	0.001	0.00000032	0.000024	0.000024	0.0016	0.045	NB	0.036	--
alpha-Endosulfan	0.00041	0.00065	0.0011	0.000000082	0.000011	0.000011	0.00074	0.6	NB	0.0012	--
alpha-Hexachlorocyclohexane	0.00032	0.0017	0.00017	0.000000064	0.000019	0.000019	0.0013	1.3	NB	0.00098	--
beta-Endosulfan	0.000049	0.00026	0.0011	9.8E-09	0.0000068	0.0000068	0.00045	0.6	NB	0.00075	--
beta-Hexachlorocyclohexane	0.0038	0.0026	0.00022	0.00000076	0.000029	0.00003	0.002	0.4	NB	0.0049	--
delta-Hexachlorocyclohexane	0.0007	0.00088	0.00035	0.00000014	0.000011	0.000011	0.00073	20	NB	0.000036	--
Dieldrin	0.00043	0.00068	0.0011	0.000000086	0.000011	0.000011	0.00076	0.15	NB	0.0051	--
Endosulfan sulfate	0.00065	0.0002	0.00034	0.00000013	0.0000034	0.0000035	0.00023	NB	NB	--	--
Endrin	0.0002	0.00075	0.0011	0.00000004	0.000012	0.000012	0.00081	0.092	NB	0.0088	--
Endrin aldehyde	0.00037	0.0009	0.0008	0.000000074	0.000013	0.000013	0.00084	NB	NB	--	--
Endrin ketone	0.0019	0.0009	0.00095	0.00000038	0.000013	0.000014	0.0009	NB	NB	--	--
gamma-Chlordane	0.0011	0.0061	0.0011	0.00000022	0.00007	0.00007	0.0047	0.045	NB	0.1	--
gamma-Hexachlorocyclohexane	0.00008	0.00075	0.00029	0.000000016	0.0000091	0.0000092	0.00061	10	NB	0.000061	--
Heptachlor	0.00035	0.00033	0.00046	0.00000007	0.0000052	0.0000053	0.00035	0.1	NB	0.0035	--
Heptachlor epoxide	0.00027	0.00075	0.0011	0.000000054	0.000012	0.000012	0.00081	8	NB	0.0001	--
Methoxychlor	0.0031	0.00075	0.0011	0.00000062	0.000012	0.000013	0.00085	4	NB	0.00021	--
Toxaphene	0.015	0.11	0.12	0.000003	0.0016	0.0016	0.11	1.6	NB	0.068	--
Polychlorinated biphenyls	0.098	0.41	0.0048	0.00002	0.0044	0.0045	0.3	0.14	0.27	2.1	1.1
Inorganic Analytes											
Aluminum	3,200	270	17	0.65	3	3.6	240	1.9	19	130	13
Antimony	0.66	0.019	0.0062	0.00013	0.00023	0.00036	0.024	0.66	NB	0.036	--
Arsenic	6.7	5.1	0.065	0.0013	0.055	0.057	3.8	0.13	1.3	29	2.9
Barium	14	0.79	1.4	0.0028	0.014	0.016	1.1	5.1	20	0.21	0.054
Beryllium	0.2	0.0071	0.0011	0.00004	0.000081	0.00012	0.0081	0.66	NB	0.012	--
Cadmium	0.068	0.3	0.34	0.000014	0.0045	0.0045	0.3	1	10	0.3	0.03
Chromium	16	0.72	0.4	0.0031	0.0092	0.012	0.82	3.3	69	0.25	0.012
Cobalt	0.94	0.68	0.027	0.00019	0.0074	0.0076	0.51	0.5	2	1	0.25
Copper	35	2.7	23	0.0069	0.11	0.12	7.8	12	15	0.65	0.52
Iron	7,500	210	42	1.5	2.4	3.9	260	17.9	NB	15	--
Lead	82	8.8	0.19	0.017	0.096	0.11	7.5	11	90	0.68	0.083
Manganese	29	1.7	9.4	0.0059	0.052	0.058	3.9	88	280	0.044	0.014
Mercury	0.18	0.1	0.019	0.000036	0.0011	0.0012	0.079	0.032	0.16	2.5	0.49
Nickel	1.9	0.29	0.24	0.00037	0.004	0.0044	0.29	40	80	0.0073	0.0036
Selenium	1.1	0.22	0.21	0.00022	0.0031	0.0034	0.22	0.2	0.33	1.1	0.68
Silver	1.3	0.11	0.078	0.00026	0.0015	0.0017	0.12	1.81	NB	0.064	--
Thallium	0.028	0.0099	0.00093	0.0000056	0.00011	0.00012	0.0077	0.074	0.74	0.1	0.01
Vanadium	27	0.58	0.093	0.0055	0.0066	0.012	0.81	0.21	2.1	3.8	0.38
Zinc	27	13	51	0.0054	0.32	0.33	22	160	320	0.14	0.069

Footnotes on following page.

Table F-12. (cont.)

Note: Hazard quotients greater than or equal to 1.0 are boxed.

--	-	hazard quotient could not be calculated because there was no TRV available
BW	-	body weight
CoPC	-	chemical of potential concern
dw	-	dry weight
LOAEL	-	lowest-observed-adverse-effect level
NB	-	no benchmark
NOAEL	-	no-observed-adverse-effect level
PCB	-	polychlorinated biphenyl
TRV	-	toxicity reference value
ww	-	wet weight

The following data were used to develop this scenario: surface sediment and earthworm data collected at terrestrial reference station 2 in 2004 (see Appendix Tables C-3, C-5, C-29 and C-30) and terrestrial insect data collected at the site in 2004 (see Appendix Tables C-11 and C-12). Because only one terrestrial insects composite sample was collected for the whole reference site, the results for this sample are used to represent insect concentrations in all reference models for the short-tailed shrew.

Table F-12a. Shrew EPC calculation based on media and prey CoPC data for reference Station TERRREF2

Medium/Prey	Survey Station	Date	Sample ID	Field Replicate	Units	Original Data/ Intermediate Calculation	Arsenic Concentration
Sediment							
	TERRREF2	10/4/2004	SD0015	0	mg/kg		6.68
						TERRREF 2 Mean	6.68
						TERRREF 2 mean - 2 significant digits	6.7
Earthworm							
	TERRREF2	10/4/2004	SD0015-EW	0	mg/kg		5.1
						TERRREF 2 Mean	5.1
Insect							
	REF	10/7/2004	TI0002	0	mg/kg		0.065
						Reference Mean	0.065

Note: Because only one terrestrial insect composite sample was collected for the whole site, the results for this sample are used to represent insect concentrations in all site models for the short-tailed shrew.

Earthworm (*Eisenia fetida*) data were from Day 28 of the bioaccumulation test for this station.

CoPC - chemical of potential concern
EPC - exposure point concentration

Table F-13. Food web model results for short-tailed shrew based on media and prey CoPC data for marsh reference Station TERRREF3

Analyte	Concentration			Daily Exposure		Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV		Hazard Quotient	
	Sediment (mg/kg dw)	Earthworms (mg/kg ww)	Insects (mg/kg ww)	Sediment (mg/day)	Food (mg/day)			NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Semivolatiles Organic Compounds[a]											
2,4,5-Trichlorophenol	0.003	0.13	0.13	0.0000006	0.0019	0.0019	0.12	100	NB	0.0012	--
2,4,6-Trichlorophenol	0.0018	0.11	0.11	0.00000036	0.0016	0.0016	0.11	NB	NB	--	--
2,4-Dichlorophenol	0.0018	0.14	0.14	0.00000036	0.002	0.002	0.13	0.3	NB	0.45	--
2,4-Dimethylphenol	0.0055	0.15	0.15	0.0000011	0.0022	0.0022	0.14	50	NB	0.0029	--
2,4-Dinitrophenol	0.036	0.27	0.27	0.0000072	0.0039	0.0039	0.26	NB	NB	--	--
2,4-Dinitrotoluene	0.0028	0.1	0.1	0.00000056	0.0014	0.0014	0.096	0.2	NB	0.48	--
2,6-Dinitrotoluene	0.0028	0.085	0.085	0.00000056	0.0012	0.0012	0.082	3.54	NB	0.023	--
2-Chloronaphthalene	0.0036	0.07	0.07	0.00000072	0.001	0.001	0.067	250	NB	0.00027	--
2-Chlorophenol	0.0017	0.13	0.13	0.00000034	0.0019	0.0019	0.12	5	NB	0.025	--
2-Methyl-4,6-dinitrophenol	0.0017	0.18	0.18	0.00000034	0.0026	0.0026	0.17	0.42	NB	0.41	--
2-Methylnaphthalene	0.0096	0.0016	0.0016	0.0000019	0.000023	0.000025	0.0017	5	NB	0.00033	--
2-Methylphenol	0.0034	0.65	0.65	0.00000068	0.0094	0.0094	0.62	50	NB	0.012	--
2-Nitroaniline	0.0027	0.3	0.3	0.00000054	0.0043	0.0043	0.29	71.2	NB	0.004	--
2-Nitrophenol	0.0026	0.18	0.18	0.00000052	0.0026	0.0026	0.17	6.68	NB	0.026	--
3,3'-Dichlorobenzidine	0.0037	9	9	0.00000074	0.13	0.13	8.6	NB	NB	--	--
3-Nitroaniline	0.0026	0.11	0.11	0.00000052	0.0016	0.0016	0.11	18	NB	0.0059	--
4-Bromophenyl ether	0.0014	0.065	0.065	0.00000028	0.00094	0.00094	0.062	NB	NB	--	--
4-Chloro-3-methylphenol	0.0021	0.85	0.85	0.00000042	0.012	0.012	0.82	14.2	NB	0.057	--
4-Chloroaniline	0.0021	0.07	0.07	0.00000042	0.001	0.001	0.067	1.25	NB	0.054	--
4-Chlorophenyl-phenyl ether	0.002	0.055	0.055	0.0000004	0.00079	0.00079	0.053	NB	NB	--	--
4-Methylphenol	0.0029	0.18	0.18	0.00000058	0.0026	0.0026	0.17	NB	NB	--	--
4-Nitroaniline	0.0034	0.3	0.3	0.00000068	0.0043	0.0043	0.29	NB	NB	--	--
4-Nitrophenol	0.03	0.09	0.09	0.000006	0.0013	0.0013	0.087	NB	NB	--	--
Acenaphthene	0.0028	0.00054	0.00054	0.00000056	0.0000078	0.0000083	0.00056	175	NB	0.0000032	--
Acenaphthylene	0.012	0.002	0.002	0.0000024	0.000029	0.000031	0.0021	NB	NB	--	--
Acetophenone	0.012	0.23	0.23	0.0000024	0.0033	0.0033	0.22	423	NB	0.00052	--
Anthracene	0.012	0.0022	0.0022	0.0000024	0.000032	0.000034	0.0023	1,000	NB	0.0000023	--
Atrazine	0.0022	0.065	0.065	0.00000044	0.00094	0.00094	0.062	3.5	NB	0.018	--
Benz[a]anthracene	0.053	0.0038	0.0038	0.000011	0.000055	0.000065	0.0044	NB	NB	--	--
Benzaldehyde	0.019	8.5	8.5	0.0000038	0.12	0.12	8.2	143	NB	0.057	--
Benzo[a]pyrene	0.069	0.005	0.005	0.000014	0.000072	0.000086	0.0057	1	NB	0.0057	--
Benzo[b]fluoranthene	0.1	0.0054	0.0054	0.00002	0.000078	0.000098	0.0065	NB	NB	--	--
Benzo[ghi]perylene	0.055	0.0045	0.0045	0.000011	0.000065	0.000076	0.0051	NB	NB	--	--
Benzo[k]fluoranthene	0.032	0.0056	0.0056	0.0000064	0.000081	0.000087	0.0058	NB	NB	--	--
Biphenyl	0.0048	0.055	0.055	0.00000096	0.00079	0.00079	0.053	50	NB	0.0011	--
bis[2-chloroethoxy]methane	0.0013	0.06	0.06	0.00000026	0.00086	0.00086	0.058	13	NB	0.0044	--
bis[2-chloroethyl]ether	0.0024	0.1	0.1	0.00000048	0.0014	0.0014	0.096	1.5	NB	0.064	--
Bis[2-chloroisopropyl]ether	0.0012	0.13	0.13	0.00000024	0.0019	0.0019	0.12	35.8	NB	0.0035	--
bis[2-Ethylhexyl]phthalate	0.26	0.65	0.65	0.000052	0.0094	0.0094	0.63	3.5	NB	0.18	--
Butylbenzyl phthalate	0.013	0.17	0.17	0.0000026	0.0024	0.0025	0.16	159	NB	0.001	--
Caprolactam	0.012	0.15	0.15	0.0000024	0.0022	0.0022	0.14	50	NB	0.0029	--
Carbazole	0.0049	0.38	0.38	0.00000098	0.0055	0.0055	0.36	10	NB	0.036	--
Chrysene	0.069	0.006	0.006	0.000014	0.000086	0.0001	0.0067	NB	NB	--	--
Dibenz[a,h]anthracene	0.013	0.0011	0.0011	0.0000026	0.000016	0.000018	0.0012	NB	NB	--	--

Table F-13. (cont.)

Analyte	Concentration Sediment (mg/kg dw)	Concentration Earthworms (mg/kg ww)	Concentration Insects (mg/kg ww)	Daily Exposure Sediment (mg/day)	Daily Exposure Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV NOAEL (mg/kg-day)	TRV LOAEL (mg/kg-day)	Hazard Quotient NOAEL Hazard Quotient	Hazard Quotient LOAEL Hazard Quotient
Dibenzofuran	0.0034	0.00092	0.00092	0.00000068	0.000013	0.000014	0.00093	12.5	NB	0.000074	--
Diethyl phthalate	0.0035	0.11	0.11	0.0000007	0.0016	0.0016	0.11	4,580	NB	0.000023	--
Dimethyl phthalate	0.0018	0.06	0.06	0.00000036	0.00086	0.00086	0.058	48	NB	0.0012	--
Di-n-butyl phthalate	0.0097	0.33	0.33	0.0000019	0.0048	0.0048	0.32	550	NB	0.00058	--
Di-n-octyl phthalate	0.0047	0.15	0.15	0.00000094	0.0022	0.0022	0.14	17.5	NB	0.0082	--
Fluoranthene	0.1	0.008	0.008	0.00002	0.00012	0.00014	0.009	125	NB	0.000072	--
Fluorene	0.0043	0.0011	0.0011	0.00000086	0.000016	0.000017	0.0011	125	NB	0.0000089	--
Hexachlorobenzene	0.0021	0.07	0.07	0.00000042	0.001	0.001	0.067	0.08	NB	0.84	--
Hexachlorobutadiene	0.0014	0.1	0.1	0.00000028	0.0014	0.0014	0.096	1.74	NB	0.055	--
Hexachlorocyclopentadiene	0.015	60	60	0.000003	0.86	0.86	58	7	NB	8.2	--
Hexachloroethane	0.0022	0.1	0.1	0.00000044	0.0014	0.0014	0.096	1	NB	0.096	--
Indeno[1,2,3-cd]pyrene	0.053	0.0047	0.0047	0.000011	0.000068	0.000078	0.0052	NB	NB	--	--
Isophorone	0.0016	0.07	0.07	0.00000032	0.001	0.001	0.067	150	NB	0.00045	--
Naphthalene	0.016	0.0028	0.0028	0.0000032	0.00004	0.000044	0.0029	71	NB	0.000041	--
Nitrobenzene	0.002	0.12	0.12	0.0000004	0.0017	0.0017	0.12	12	NB	0.0096	--
N-nitroso-di-n-propylamine	0.0032	0.095	0.095	0.00000064	0.0014	0.0014	0.091	9.6	NB	0.0095	--
N-nitrosodiphenylamine	0.0022	0.11	0.11	0.00000044	0.0016	0.0016	0.11	NB	NB	--	--
Pentachlorophenol	0.0085	0.36	0.36	0.0000017	0.0052	0.0052	0.35	3	NB	0.12	--
Phenanthrene	0.036	0.0048	0.0048	0.0000072	0.000069	0.000076	0.0051	14	NB	0.00036	--
Phenol	0.0055	0.2	0.2	0.0000011	0.0029	0.0029	0.19	60	NB	0.0032	--
Pyrene	0.086	0.0078	0.0078	0.000017	0.00011	0.00013	0.0086	75	NB	0.00012	--
Total PAHs	0.71	0.066	0.066	0.00014	0.00095	0.0011	0.073	1	10	0.073	0.0073
Pesticides/PCBs											
4,4'-DDD	0.0042	0.0011	0.0024	0.00000084	0.000021	0.000021	0.0014	2.26	NB	0.00063	--
4,4'-DDE	0.0094	0.0013	0.0011	0.0000019	0.000018	0.00002	0.0013	970	NB	0.0000014	--
4,4'-DDT	0.03	0.011	0.0012	0.000006	0.00012	0.00013	0.0086	0.05	NB	0.17	--
Aldrin	0.0005	0.00021	0.00021	0.0000001	0.000003	0.0000031	0.00021	0.25	NB	0.00083	--
alpha-Chlordane	0.01	0.0052	0.001	0.000002	0.00006	0.000062	0.0041	0.045	NB	0.092	--
alpha-Endosulfan	0.0075	0.00085	0.0011	0.0000015	0.000013	0.000015	0.00098	0.6	NB	0.0016	--
alpha-Hexachlorocyclohexane	0.0005	0.00017	0.00017	0.0000001	0.0000024	0.0000025	0.00017	1.3	NB	0.00013	--
beta-Endosulfan	0.0016	0.00036	0.0011	0.00000032	0.0000078	0.0000082	0.00054	0.6	NB	0.00091	--
beta-Hexachlorocyclohexane	0.0029	0.0011	0.00022	0.00000058	0.000013	0.000013	0.00088	0.4	NB	0.0022	--
delta-Hexachlorocyclohexane	0.0005	0.00094	0.00035	0.0000001	0.000011	0.000012	0.00077	20	NB	0.000038	--
Dieldrin	0.016	0.00086	0.0011	0.0000032	0.000013	0.000016	0.0011	0.15	NB	0.0073	--
Endosulfan sulfate	0.00065	0.00028	0.00034	0.00000013	0.0000042	0.0000044	0.00029	NB	NB	--	--
Endrin	0.00024	0.0011	0.0011	0.000000048	0.000016	0.000016	0.0011	0.092	NB	0.012	--
Endrin aldehyde	0.00065	0.0013	0.0008	0.00000013	0.000017	0.000017	0.0011	NB	NB	--	--
Endrin ketone	0.0012	0.0003	0.00095	0.00000024	0.0000067	0.0000069	0.00046	NB	NB	--	--
gamma-Chlordane	0.014	0.011	0.0011	0.0000028	0.00012	0.00013	0.0084	0.045	NB	0.19	--
gamma-Hexachlorocyclohexane	0.0001	0.00029	0.00029	0.00000002	0.0000042	0.0000042	0.00028	10	NB	0.000028	--
Heptachlor	0.0005	0.00047	0.00046	0.0000001	0.0000067	0.0000068	0.00046	0.1	NB	0.0046	--
Heptachlor epoxide	0.0014	0.0011	0.0011	0.00000028	0.000016	0.000016	0.0011	8	NB	0.00013	--
Methoxychlor	0.0007	0.0013	0.0011	0.00000014	0.000018	0.000018	0.0012	4	NB	0.0003	--
Toxaphene	0.07	0.11	0.12	0.000014	0.0016	0.0016	0.11	1.6	NB	0.068	--
Polychlorinated biphenyls	0.77	0.55	0.0048	0.00015	0.006	0.0061	0.41	0.14	0.27	2.9	1.5

Table F-13. (cont.)

	Concentration			Daily Exposure				TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Earthworms (mg/kg ww)	Insects (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Inorganic Analytes											
Aluminum	14,000	650	17	2.8	7	9.9	660	1.9	19	$\boxed{350}$	$\boxed{35}$
Antimony	2.3	0.034	0.0062	0.00046	0.00039	0.00085	0.056	0.66	NB	0.085	--
Arsenic	50	3.5	0.065	0.01	0.038	0.048	3.2	0.13	1.3	$\boxed{25}$	$\boxed{2.5}$
Barium	57	2.1	1.4	0.012	0.028	0.039	2.6	5.1	20	0.51	0.13
Beryllium	1	0.026	0.0011	0.0002	0.00028	0.00049	0.032	0.66	NB	0.049	--
Cadmium	2.7	0.85	0.34	0.00054	0.01	0.011	0.73	1	10	0.73	0.073
Chromium	90	1.9	0.4	0.018	0.022	0.04	2.7	3.3	69	0.81	0.039
Cobalt	12	0.68	0.027	0.0024	0.0074	0.0098	0.66	0.5	2	$\boxed{1.3}$	0.33
Copper	310	9.1	23	0.063	0.18	0.24	16	12	15	$\boxed{1.3}$	$\boxed{1.1}$
Iron	32,000	630	42	6.5	7	13	900	17.9	NB	$\boxed{50}$	--
Lead	180	4	0.19	0.036	0.044	0.08	5.3	11	90	0.49	0.059
Manganese	370	6.6	9.4	0.075	0.11	0.18	12	88	280	0.14	0.043
Mercury	1.4	0.11	0.019	0.00028	0.0013	0.0015	0.1	0.032	0.16	$\boxed{3.2}$	0.64
Nickel	34	0.96	0.24	0.0068	0.011	0.018	1.2	40	80	0.03	0.015
Selenium	5.2	0.22	0.21	0.001	0.0031	0.0042	0.28	0.2	0.33	$\boxed{1.4}$	0.84
Silver	4.6	0.15	0.078	0.00093	0.0019	0.0028	0.19	1.81	NB	0.1	--
Thallium	0.19	0.022	0.00093	0.000038	0.00024	0.00028	0.019	0.074	0.74	0.25	0.025
Vanadium	63	1.4	0.093	0.013	0.015	0.028	1.9	0.21	2.1	$\boxed{8.9}$	0.89
Zinc	370	19	51	0.075	0.39	0.46	31	160	320	0.19	0.097

Note: Hazard quotients greater than or equal to 1.0 are boxed.

-- - hazard quotient could not be calculated because there was no TRV available
BW - body weight
CoPC - chemical of potential concern
dw - dry weight
LOAEL - lowest-observed-adverse-effect level
NB - no benchmark
NOAEL - no-observed-adverse-effect level
PAH - polycyclic aromatic hydrocarbon
PCB - polychlorinated biphenyl
TRV - toxicity reference value
ww - wet weight

The following data were used to develop this scenario: surface sediment and earthworm data collected at terrestrial reference station 3 in 2004 (see Appendix Tables C-2, C-3, C-5, C-28, C-29 and C-30) and terrestrial insect data collected at the site in 2004 (see Appendix Tables C-11 and C-12). Because only one terrestrial insects composite sample was collected for the whole reference site, the results fo this sample are used to represent insect concentrations in all reference models for the short-tailed shrew.

[a] Semivolatile organic compounds were not analyzed in insects, and earthworm concentrations were used as surrogate values for calculations.

Table F-14. Food web model results for muskrat based on media and food CoPC data for OU-3 marsh

	Concentration		Daily Exposure				TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Plants (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Semivolatile Organic Compounds										
2,4,5-Trichlorophenol	0.0057	0.011	0.000022	0.005	0.0051	0.0038	100	NB	0.000038	--
2,4,6-Trichlorophenol	0.023	0.01	0.000089	0.0046	0.0047	0.0035	NB	NB	--	--
2,4-Dichlorophenol	0.023	0.006	0.000089	0.0028	0.0028	0.0021	0.3	NB	0.007	--
2,4-Dimethylphenol	0.008	0.0065	0.000031	0.003	0.003	0.0022	50	NB	0.000045	--
2,4-Dinitrophenol	0.45	0.012	0.0017	0.0055	0.0072	0.0054	NB	NB	--	--
2,4-Dinitrotoluene	0.035	0.0043	0.00013	0.002	0.0021	0.0016	0.2	NB	0.0078	--
2,6-Dinitrotoluene	0.035	0.0035	0.00013	0.0016	0.0017	0.0013	3.54	NB	0.00036	--
2-Chloronaphthalene	0.045	0.003	0.00017	0.0014	0.0016	0.0011	250	NB	0.0000046	--
2-Chlorophenol	0.022	0.0055	0.000085	0.0025	0.0026	0.0019	5	NB	0.00039	--
2-Methyl-4,6-dinitrophenol	0.022	0.008	0.000085	0.0037	0.0038	0.0028	0.42	NB	0.0066	--
2-Methylnaphthalene	0.018	0.0021	0.000069	0.00096	0.001	0.00077	5	NB	0.00015	--
2-Methylphenol	0.029	0.027	0.00011	0.012	0.013	0.0093	50	NB	0.00019	--
2-Nitroaniline	0.034	0.013	0.00013	0.006	0.0061	0.0045	71.2	NB	0.000063	--
2-Nitrophenol	0.033	0.008	0.00013	0.0037	0.0038	0.0028	6.68	NB	0.00042	--
3,3'-Dichlorobenzidine	0.046	0.39	0.00018	0.18	0.18	0.13	NB	NB	--	--
3-Nitroaniline	0.033	0.0045	0.00013	0.0021	0.0022	0.0016	18	NB	0.00009	--
4-Bromophenyl ether	0.018	0.0028	0.000069	0.0013	0.0014	0.001	NB	NB	--	--
4-Chloro-3-methylphenol	0.027	0.055	0.0001	0.025	0.025	0.019	14.2	NB	0.0013	--
4-Chloroaniline	0.027	0.003	0.0001	0.0014	0.0015	0.0011	1.25	NB	0.00088	--
4-Chlorophenyl-phenyl ether	0.025	0.0023	0.000096	0.0011	0.0012	0.00085	NB	NB	--	--
4-Methylphenol	0.015	0.018	0.000058	0.0083	0.0083	0.0062	NB	NB	--	--
4-Nitroaniline	0.043	0.013	0.00017	0.006	0.0061	0.0045	NB	NB	--	--
4-Nitrophenol	0.38	0.07	0.0015	0.032	0.034	0.025	NB	NB	--	--
Acenaphthene	0.0032	0.00056	0.000012	0.00026	0.00027	0.0002	175	NB	0.0000011	--
Acenaphthylene	0.012	0.0016	0.000046	0.00073	0.00078	0.00058	NB	NB	--	--
Acetophenone	0.046	0.029	0.00018	0.013	0.013	0.01	423	NB	0.000024	--
Anthracene	0.016	0.002	0.000062	0.00092	0.00098	0.00073	1,000	NB	0.00000073	--
Atrazine	0.028	0.0028	0.00011	0.0013	0.0014	0.001	3.5	NB	0.00029	--
Benz[a]anthracene	0.05	0.009	0.00019	0.0041	0.0043	0.0032	NB	NB	--	--
Benzaldehyde	0.1	0.37	0.00039	0.17	0.17	0.13	143	NB	0.00088	--
Benzo[a]pyrene	0.06	0.011	0.00023	0.005	0.0053	0.0039	1	NB	0.0039	--
Benzo[b]fluoranthene	0.1	0.014	0.00039	0.0064	0.0068	0.005	NB	NB	--	--
Benzo[ghi]perylene	0.06	0.012	0.00023	0.0055	0.0057	0.0043	NB	NB	--	--
Benzo[k]fluoranthene	0.035	0.015	0.00013	0.0069	0.007	0.0052	NB	NB	--	--
Biphenyl	0.031	0.0052	0.00012	0.0024	0.0025	0.0019	50	NB	0.000037	--
bis[2-chloroethoxy]methane	0.017	0.0025	0.000066	0.0011	0.0012	0.0009	13	NB	0.000069	--
bis[2-chloroethyl]ether	0.017	0.0044	0.000066	0.002	0.0021	0.0015	1.5	NB	0.001	--
Bis[2-chloroisopropyl]ether	0.015	0.0055	0.000058	0.0025	0.0026	0.0019	35.8	NB	0.000053	--
bis[2-Ethylhexyl]phthalate	1	0.2	0.0039	0.092	0.096	0.071	3.5	NB	0.02	--
Butylbenzyl phthalate	0.011	0.007	0.000042	0.0032	0.0033	0.0024	159	NB	0.000015	--
Caprolactam	0.15	0.0065	0.00058	0.003	0.0036	0.0026	50	NB	0.000053	--
Carbazole	0.008	0.017	0.000031	0.0078	0.0078	0.0058	10	NB	0.00058	--
Chrysene	0.06	0.014	0.00023	0.0064	0.0067	0.0049	NB	NB	--	--

Table F-14. (cont.)

Analyte	Concentration		Daily Exposure		Total Daily Intake	BW Normalized Exposure	TRV		Hazard Quotient	
	Sediment (mg/kg dw)	Plants (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	(mg/day)	(mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Dibenz[a,h]anthracene	0.017	0.0028	0.000066	0.0013	0.0014	0.001	NB	NB	--	--
Dibenzofuran	0.0036	0.0009	0.000014	0.00041	0.00043	0.00032	12.5	NB	0.000025	--
Diethyl phthalate	0.12	0.0047	0.00046	0.0022	0.0026	0.0019	4,580	NB	0.00000042	--
Dimethyl phthalate	0.0062	0.0026	0.000024	0.0012	0.0012	0.0009	48	NB	0.000019	--
Di-n-butyl phthalate	0.5	0.25	0.0019	0.11	0.12	0.086	550	NB	0.00016	--
Di-n-octyl phthalate	0.009	0.0065	0.000035	0.003	0.003	0.0022	17.5	NB	0.00013	--
Fluoranthene	0.09	0.022	0.00035	0.01	0.01	0.0077	125	NB	0.000062	--
Fluorene	0.0064	0.00074	0.000025	0.00034	0.00036	0.00027	125	NB	0.0000022	--
Hexachlorobenzene	0.0028	0.003	0.000011	0.0014	0.0014	0.001	0.08	NB	0.013	--
Hexachlorobutadiene	0.018	0.0043	0.000069	0.002	0.002	0.0015	1.74	NB	0.00087	--
Hexachlorocyclopentadiene	0.19	2.5	0.00073	1.1	1.1	0.85	7	NB	0.12	--
Hexachloroethane	0.028	0.0043	0.00011	0.002	0.0021	0.0015	1	NB	0.0015	--
Indeno[1,2,3-cd]pyrene	0.06	0.013	0.00023	0.006	0.0062	0.0046	NB	NB	--	--
Isophorone	0.031	0.058	0.00012	0.027	0.027	0.02	150	NB	0.00013	--
Naphthalene	0.025	0.0037	0.000096	0.0017	0.0018	0.0013	71	NB	0.000019	--
Nitrobenzene	0.018	0.005	0.000069	0.0023	0.0024	0.0018	12	NB	0.00015	--
N-nitroso-di-n-propylamine	0.04	0.0041	0.00015	0.0019	0.002	0.0015	9.6	NB	0.00016	--
N-nitrosodiphenylamine	0.06	0.04	0.00023	0.018	0.019	0.014	NB	NB	--	--
Pentachlorophenol	0.015	0.1	0.000058	0.046	0.046	0.034	3	NB	0.011	--
Phenanthrene	0.039	0.01	0.00015	0.0046	0.0047	0.0035	14	NB	0.00025	--
Phenol	0.14	0.07	0.00054	0.032	0.033	0.024	60	NB	0.0004	--
Pyrene	0.08	0.019	0.00031	0.0087	0.009	0.0067	75	NB	0.000089	--
Total PAHs	0.7	0.15	0.0027	0.069	0.072	0.053	1	10	0.053	0.0053
Pesticides/PCBs										
4,4'-DDD	0.006	0.0024	0.000023	0.0011	0.0011	0.00083	2.26	NB	0.00037	--
4,4'-DDE	0.008	0.0018	0.000031	0.00083	0.00086	0.00063	970	NB	0.00000065	--
4,4'-DDT	0.09	0.0043	0.00035	0.002	0.0023	0.0017	0.05	NB	0.034	--
Aldrin	0.01	0.0029	0.000039	0.0013	0.0014	0.001	0.25	NB	0.0041	--
alpha-Chlordane	0.0033	0.001	0.000013	0.00046	0.00047	0.00035	0.045	NB	0.0078	--
alpha-Endosulfan	0.007	0.0015	0.000027	0.00069	0.00072	0.00053	0.6	NB	0.00088	--
alpha-Hexachlorocyclohexane	0.0009	0.00025	0.0000035	0.00011	0.00012	0.000088	1.3	NB	0.000067	--
beta-Endosulfan	0.0023	0.0008	0.0000089	0.00037	0.00038	0.00028	0.6	NB	0.00046	--
beta-Hexachlorocyclohexane	0.008	0.00055	0.000031	0.00025	0.00028	0.00021	0.4	NB	0.00052	--
delta-Hexachlorocyclohexane	0.0015	0.0034	0.0000058	0.0016	0.0016	0.0012	20	NB	0.000058	--
Dieldrin	0.011	0.0018	0.000042	0.00083	0.00087	0.00064	0.15	NB	0.0043	--
Endosulfan sulfate	0.033	0.00095	0.00013	0.00044	0.00056	0.00042	NB	NB	--	--
Endrin	0.007	0.0044	0.000027	0.002	0.002	0.0015	0.092	NB	0.016	--
Endrin aldehyde	0.008	0.0006	0.000031	0.00028	0.00031	0.00023	NB	NB	--	--
Endrin ketone	0.03	0.00033	0.00012	0.00015	0.00027	0.0002	NB	NB	--	--
gamma-Chlordane	0.16	0.008	0.00062	0.0037	0.0043	0.0032	0.045	NB	0.071	--
gamma-Hexachlorocyclohexane	0.004	0.002	0.000015	0.00092	0.00093	0.00069	10	NB	0.000069	--
Heptachlor	0.0083	0.0005	0.000032	0.00023	0.00026	0.00019	0.1	NB	0.0019	--
Heptachlor epoxide	0.019	0.00053	0.000073	0.00024	0.00032	0.00023	8	NB	0.000029	--
Methoxychlor	0.02	0.0094	0.000077	0.0043	0.0044	0.0033	4	NB	0.00081	--

Table F-14. (cont.)

Analyte	Concentration Sediment (mg/kg dw)	Concentration Plants (mg/kg ww)	Daily Exposure Sediment (mg/day)	Daily Exposure Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV NOAEL (mg/kg-day)	TRV LOAEL (mg/kg-day)	Hazard Quotient NOAEL Hazard Quotient	Hazard Quotient LOAEL Hazard Quotient
Toxaphene	1.8	0.12	0.0069	0.055	0.062	0.046	1.6	NB	0.029	--
Polychlorinated biphenyls	4	0.3	0.015	0.14	0.15	0.11	0.14	0.27	0.81	0.42
Inorganic Analytes										
Aluminum	11,000	390	42	180	220	160	1.9	19	$\boxed{86}$	$\boxed{8.6}$
Antimony	12	0.59	0.045	0.27	0.32	0.23	0.66	NB	0.36	--
Arsenic	2,000	5.8	7.7	2.7	10	7.7	0.13	1.3	$\boxed{59}$	$\boxed{5.9}$
Barium	72	4.3	0.28	2	2.3	1.7	5.1	20	0.33	0.083
Beryllium	0.6	0.037	0.0023	0.017	0.019	0.014	0.66	NB	0.022	--
Cadmium	1.6	0.28	0.0062	0.13	0.13	0.1	1	10	0.1	0.01
Chromium	160	10	0.61	4.6	5.2	3.9	3.3	69	$\boxed{1.2}$	0.056
Cobalt	9.4	0.9	0.036	0.41	0.45	0.33	0.5	2	0.67	0.17
Copper	480	38	1.9	17	19	14	12	15	$\boxed{1.2}$	0.95
Iron	42,000	2200	160	1,000	1,200	870	17.9	NB	$\boxed{49}$	--
Lead	210	10	0.83	4.6	5.4	4	11	90	0.36	0.045
Manganese	360	39	1.4	18	19	14	88	280	0.16	0.051
Mercury	13	0.6	0.051	0.28	0.33	0.24	0.032	0.16	$\boxed{7.5}$	$\boxed{1.5}$
Nickel	54	4.2	0.21	1.9	2.1	1.6	40	80	0.04	0.02
Selenium	2.7	0.13	0.01	0.06	0.07	0.052	0.2	0.33	0.26	0.16
Silver	24	1.3	0.093	0.6	0.69	0.51	1.81	NB	0.28	--
Thallium	0.13	0.011	0.0005	0.005	0.0056	0.0041	0.074	0.74	0.056	0.0056
Vanadium	49	2	0.19	0.92	1.1	0.82	0.21	2.1	$\boxed{3.9}$	0.39
Zinc	200	21	0.79	9.6	10	7.7	160	320	0.048	0.024

Note: Hazard quotients greater than or equal to 1.0 are boxed.

-- - hazard quotient could not be calculated because there was no TRV available
BW - body weight
CoPC - chemical of potential concern
dw - dry weight
LOAEL - lowest-observed-adverse-effect level
NB - no benchmark
NOAEL - no-observed-adverse-effect level
OU-3 - Operable Unit 3
PAH - polycyclic aromatic hydrocarbon
PCB - polychlorinated biphenyl
TRV - toxicity reference value
ww - wet weight

The following data were used to develop this scenario: surface sediment and *Phragmites* data collected at marsh and upland site stations in 2004 (see Appendix Tables C-2, C-3, C-5, C-7, C-8 and C-9).

Exposure point concentrations are means of detected values. However, if a chemical was undetected in all samples, its concentration was estimated as one-half of the maximum detection limit.

Table F-14a. Muskrat EPC calculation based on media and prey CoPC data for OU-3 marsh

Medium/Prey	Survey Station	Date	Sample ID	Field Replicate	Units	Original Data/ Intermediate Calculation	Arsenic Concentration
Sediment							
	11A	9/29/2004	SD0006	0	mg/kg		31.6
	12	10/4/2004	SD0016	0	mg/kg		1,470
	13	10/4/2004	SD0019	0	mg/kg		67.5
	13A	9/28/2004	SD0002	0	mg/kg		9.34
	14	10/4/2004	SD0020	0	mg/kg		43.2
	16	9/29/2004	SD0007	0	mg/kg		1,050
	17	10/4/2004	SD0017D	1	mg/kg	15,000	
	17	10/4/2004	SD0017D	2	mg/kg	20,500	
						Field Rep. Average	17,750
	18A	9/28/2004	SD0004	0	mg/kg		12
	19	9/29/2004	SD0005	0	mg/kg		16.6
	22	9/28/2004	SD0003	0	mg/kg		34.3
						OU-3 Mean	2,048
						OU-3 mean - 3 significant figures	2,000
Vegetation							
	11A	10/5/2004	PH0006	0	mg/kg		13.3 *J*
	13	10/5/2004	PH0003	0	mg/kg		5.73 *J*
	13A	10/5/2004	PH0004	0	mg/kg		3.3 *J*
	14	10/5/2004	PH0001-D	1	mg/kg	1.2	*J*
	14	10/5/2004	PH0001-D	2	mg/kg	1.1	*J*
						Field Rep. Average	1.2 *J*
	22	10/5/2004	PH0007	0	mg/kg		5.3 *J*
						OU-3 Mean	5.8 *J*

Note: Mean detected values used for 2004 marsh and upland surface sediment and *Phragmites* .

CoPC - chemical of potential concern
EPC - exposure point concentration
J - estimated value

Table F-15. Food web model results for muskrat based on media and food CoPC data for reference marsh

Analyte	Concentration		Daily Exposure		Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV		Hazard Quotient	
	Sediment (mg/kg dw)	Plants (mg/kg ww)	Sediment (mg/day)	Food (mg/day)			NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Semivolatile Organic Compounds										
2,4,5-Trichlorophenol	0.003	0.0055	0.000012	0.0025	0.0025	0.0019	100	NB	0.000019	--
2,4,6-Trichlorophenol	0.0018	0.0044	0.0000069	0.002	0.002	0.0015	NB	NB	--	--
2,4-Dichlorophenol	0.0018	0.006	0.0000069	0.0028	0.0028	0.002	0.3	NB	0.0068	--
2,4-Dimethylphenol	0.0055	0.0065	0.000021	0.003	0.003	0.0022	50	NB	0.000045	--
2,4-Dinitrophenol	0.036	0.012	0.00014	0.0055	0.0056	0.0042	NB	NB	--	--
2,4-Dinitrotoluene	0.0028	0.0043	0.000011	0.002	0.002	0.0015	0.2	NB	0.0073	--
2,6-Dinitrotoluene	0.0028	0.0035	0.000011	0.0016	0.0016	0.0012	3.54	NB	0.00034	--
2-Chloronaphthalene	0.0036	0.003	0.000014	0.0014	0.0014	0.001	250	NB	0.0000041	--
2-Chlorophenol	0.0017	0.0055	0.0000066	0.0025	0.0025	0.0019	5	NB	0.00037	--
2-Methyl-4,6-dinitrophenol	0.0017	0.0075	0.0000066	0.0034	0.0034	0.0026	0.42	NB	0.0061	--
2-Methylnaphthalene	0.0083	0.00075	0.000032	0.00034	0.00038	0.00028	5	NB	0.000056	--
2-Methylphenol	0.0034	0.027	0.000013	0.012	0.012	0.0092	50	NB	0.00018	--
2-Nitroaniline	0.0027	0.013	0.00001	0.006	0.006	0.0044	71.2	NB	0.000062	--
2-Nitrophenol	0.0026	0.0075	0.00001	0.0034	0.0035	0.0026	6.68	NB	0.00038	--
3,3'-Dichlorobenzidine	0.0037	0.39	0.000014	0.18	0.18	0.13	NB	NB	--	--
3-Nitroaniline	0.0026	0.0045	0.00001	0.0021	0.0021	0.0015	18	NB	0.000085	--
4-Bromophenyl ether	0.0014	0.0028	0.0000054	0.0013	0.0013	0.00096	NB	NB	--	--
4-Chloro-3-methylphenol	0.0021	0.036	0.0000081	0.017	0.017	0.012	14.2	NB	0.00086	--
4-Chloroaniline	0.0021	0.003	0.0000081	0.0014	0.0014	0.001	1.25	NB	0.00082	--
4-Chlorophenyl-phenyl ether	0.002	0.0023	0.0000077	0.0011	0.0011	0.00079	NB	NB	--	--
4-Methylphenol	0.0029	0.0075	0.000011	0.0034	0.0035	0.0026	NB	NB	--	--
4-Nitroaniline	0.0034	0.013	0.000013	0.006	0.006	0.0044	NB	NB	--	--
4-Nitrophenol	0.03	0.0038	0.00012	0.0017	0.0019	0.0014	NB	NB	--	--
Acenaphthene	0.0032	0.00033	0.000012	0.00015	0.00016	0.00012	175	NB	0.00000069	--
Acenaphthylene	0.01	0.00094	0.000039	0.00043	0.00047	0.00035	NB	NB	--	--
Acetophenone	0.012	0.03	0.000046	0.014	0.014	0.01	423	NB	0.000024	--
Anthracene	0.01	0.0013	0.000039	0.0006	0.00064	0.00047	1,000	NB	0.00000047	--
Atrazine	0.0022	0.0028	0.0000085	0.0013	0.0013	0.00096	3.5	NB	0.00027	--
Benz[a]anthracene	0.045	0.0047	0.00017	0.0022	0.0023	0.0017	NB	NB	--	--
Benzaldehyde	0.019	0.37	0.000073	0.17	0.17	0.13	143	NB	0.00088	--
Benzo[a]pyrene	0.057	0.0054	0.00022	0.0025	0.0027	0.002	1	NB	0.002	--
Benzo[b]fluoranthene	0.08	0.0059	0.00031	0.0027	0.003	0.0022	NB	NB	--	--
Benzo[ghi]perylene	0.043	0.0045	0.00017	0.0021	0.0022	0.0017	NB	NB	--	--
Benzo[k]fluoranthene	0.029	0.0068	0.00011	0.0031	0.0032	0.0024	NB	NB	--	--
Biphenyl	0.0048	0.0024	0.000019	0.0011	0.0011	0.00083	50	NB	0.000017	--
bis[2-chloroethoxy]methane	0.0013	0.0025	0.000005	0.0011	0.0012	0.00085	13	NB	0.000066	--
bis[2-chloroethyl]ether	0.0024	0.0044	0.0000093	0.002	0.002	0.0015	1.5	NB	0.001	--
Bis[2-chloroisopropyl]ether	0.0012	0.0055	0.0000046	0.0025	0.0025	0.0019	35.8	NB	0.000052	--
bis[2-Ethylhexyl]phthalate	0.16	0.09	0.00062	0.041	0.042	0.031	3.5	NB	0.0089	--
Butylbenzyl phthalate	0.012	0.007	0.000046	0.0032	0.0033	0.0024	159	NB	0.000015	--
Caprolactam	0.012	0.0065	0.000046	0.003	0.003	0.0022	50	NB	0.000045	--
Carbazole	0.0049	0.017	0.000019	0.0078	0.0078	0.0058	10	NB	0.00058	--
Chrysene	0.061	0.0065	0.00024	0.003	0.0032	0.0024	NB	NB	--	--

Table F-15. (cont.)

Analyte	Concentration: Sediment (mg/kg dw)	Concentration: Plants (mg/kg ww)	Daily Exposure: Sediment (mg/day)	Daily Exposure: Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV: NOAEL (mg/kg-day)	TRV: LOAEL (mg/kg-day)	Hazard Quotient: NOAEL Hazard Quotient	Hazard Quotient: LOAEL Hazard Quotient
Dibenz[a,h]anthracene	0.014	0.0019	0.000054	0.00087	0.00093	0.00069	NB	NB	--	--
Dibenzofuran	0.003	0.00027	0.000012	0.00012	0.00014	0.0001	12.5	NB	0.000008	--
Diethyl phthalate	0.0035	0.0047	0.000013	0.0022	0.0022	0.0016	4,580	NB	0.00000035	--
Dimethyl phthalate	0.0018	0.0026	0.0000069	0.0012	0.0012	0.00089	48	NB	0.000019	--
Di-n-butyl phthalate	0.012	0.07	0.000046	0.032	0.032	0.024	550	NB	0.000043	--
Di-n-octyl phthalate	0.0037	0.0065	0.000014	0.003	0.003	0.0022	17.5	NB	0.00013	--
Fluoranthene	0.1	0.012	0.00039	0.0055	0.0059	0.0044	125	NB	0.000035	--
Fluorene	0.0045	0.00027	0.000017	0.00012	0.00014	0.0001	125	NB	0.00000084	--
Hexachlorobenzene	0.0021	0.003	0.0000081	0.0014	0.0014	0.001	0.08	NB	0.013	--
Hexachlorobutadiene	0.0014	0.0043	0.0000054	0.002	0.002	0.0015	1.74	NB	0.00084	--
Hexachlorocyclopentadiene	0.015	2.5	0.000058	1.1	1.1	0.85	7	NB	0.12	--
Hexachloroethane	0.0022	0.0043	0.0000085	0.002	0.002	0.0015	1	NB	0.0015	--
Indeno[1,2,3-cd]pyrene	0.044	0.0047	0.00017	0.0022	0.0023	0.0017	NB	NB	--	--
Isophorone	0.0016	0.0029	0.0000062	0.0013	0.0013	0.00099	150	NB	0.0000066	--
Naphthalene	0.011	0.0028	0.000042	0.0013	0.0013	0.00098	71	NB	0.000014	--
Nitrobenzene	0.002	0.005	0.0000077	0.0023	0.0023	0.0017	12	NB	0.00014	--
N-nitroso-di-n-propylamine	0.0032	0.0041	0.000012	0.0019	0.0019	0.0014	9.6	NB	0.00015	--
N-nitrosodiphenylamine	0.0022	0.0048	0.0000085	0.0022	0.0022	0.0016	NB	NB	--	--
Pentachlorophenol	0.0085	0.016	0.000033	0.0073	0.0074	0.0055	3	NB	0.0018	--
Phenanthrene	0.038	0.0055	0.00015	0.0025	0.0027	0.002	14	NB	0.00014	--
Phenol	0.0055	0.0085	0.000021	0.0039	0.0039	0.0029	60	NB	0.000048	--
Pyrene	0.08	0.01	0.00031	0.0046	0.0049	0.0036	75	NB	0.000048	--
Total PAHs	0.61	0.072	0.0024	0.033	0.035	0.026	1	10	0.026	0.0026
Pesticides/PCBs										
4,4'-DDD	0.0028	0.0011	0.000011	0.0005	0.00052	0.00038	2.26	NB	0.00017	--
4,4'-DDE	0.0059	0.00006	0.000023	0.000028	0.00005	0.000037	970	NB	0.000000038	--
4,4'-DDT	0.022	0.0022	0.000085	0.001	0.0011	0.00081	0.05	NB	0.016	--
Aldrin	0.0005	0.0018	0.0000019	0.00083	0.00083	0.00061	0.25	NB	0.0025	--
alpha-Chlordane	0.005	0.00085	0.000019	0.00039	0.00041	0.0003	0.045	NB	0.0067	--
alpha-Endosulfan	0.0075	0.0024	0.000029	0.0011	0.0011	0.00084	0.6	NB	0.0014	--
alpha-Hexachlorocyclohexane	0.00028	0.00021	0.0000011	0.000096	0.000097	0.000072	1.3	NB	0.000056	--
beta-Endosulfan	0.0016	0.00018	0.0000062	0.000083	0.000089	0.000066	0.6	NB	0.00011	--
beta-Hexachlorocyclohexane	0.0038	0.0005	0.000015	0.00023	0.00024	0.00018	0.4	NB	0.00045	--
delta-Hexachlorocyclohexane	0.0007	0.00017	0.0000027	0.000078	0.000081	0.00006	20	NB	0.000003	--
Dieldrin	0.016	0.00029	0.000062	0.00013	0.00019	0.00014	0.15	NB	0.00096	--
Endosulfan sulfate	0.00065	0.0005	0.0000025	0.00023	0.00023	0.00017	NB	NB	--	--
Endrin	0.00024	0.0005	0.00000093	0.00023	0.00023	0.00017	0.092	NB	0.0019	--
Endrin aldehyde	0.0007	0.000085	0.0000027	0.000039	0.000042	0.000031	NB	NB	--	--
Endrin ketone	0.0039	0.00015	0.000015	0.000069	0.000084	0.000062	NB	NB	--	--
gamma-Chlordane	0.014	0.0011	0.000054	0.0005	0.00056	0.00041	0.045	NB	0.0092	--
gamma-Hexachlorocyclohexane	0.0001	0.0014	0.00000039	0.00064	0.00064	0.00048	10	NB	0.000048	--
Heptachlor	0.00035	0.00023	0.0000013	0.00011	0.00011	0.000079	0.1	NB	0.00079	--
Heptachlor epoxide	0.0014	0.0005	0.0000054	0.00023	0.00023	0.00017	8	NB	0.000022	--
Methoxychlor	0.0031	0.0005	0.000012	0.00023	0.00024	0.00018	4	NB	0.000045	--

Table F-15. (cont.)

Analyte	Concentration: Sediment (mg/kg dw)	Concentration: Plants (mg/kg ww)	Daily Exposure: Sediment (mg/day)	Daily Exposure: Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV: NOAEL (mg/kg-day)	TRV: LOAEL (mg/kg-day)	Hazard Quotient: NOAEL Hazard Quotient	Hazard Quotient: LOAEL Hazard Quotient
Toxaphene	0.07	0.032	0.00027	0.015	0.015	0.011	1.6	NB	0.0069	--
Polychlorinated biphenyls	0.38	0.016	0.0015	0.0073	0.0088	0.0065	0.14	0.27	0.047	0.024
Inorganic Analytes										
Aluminum	9,600	340	37	150	190	140	1.9	19	$\boxed{75}$	$\boxed{7.5}$
Antimony	2.3	0.22	0.0088	0.1	0.11	0.081	0.66	NB	0.12	--
Arsenic	32	2.1	0.12	0.96	1.1	0.8	0.13	1.3	$\boxed{6.2}$	0.62
Barium	43	3.6	0.17	1.7	1.8	1.3	5.1	20	0.26	0.067
Beryllium	0.8	0.047	0.0031	0.022	0.025	0.018	0.66	NB	0.028	--
Cadmium	1.4	0.13	0.0054	0.06	0.065	0.048	1	10	0.048	0.0048
Chromium	55	3.2	0.21	1.5	1.7	1.2	3.3	69	0.38	0.018
Cobalt	9.5	0.64	0.037	0.29	0.33	0.24	0.5	2	0.49	0.12
Copper	190	12	0.74	5.6	6.3	4.7	12	15	0.39	0.31
Iron	21,000	1,100	80	500	580	430	17.9	NB	$\boxed{24}$	--
Lead	140	8.7	0.55	4	4.5	3.4	11	90	0.31	0.037
Manganese	360	84	1.4	38	40	30	88	280	0.34	0.11
Mercury	0.8	0.045	0.0031	0.021	0.024	0.018	0.032	0.16	0.55	0.11
Nickel	34	2.2	0.13	1	1.1	0.84	40	80	0.021	0.011
Selenium	3.2	0.093	0.012	0.043	0.055	0.041	0.2	0.33	0.2	0.12
Silver	3.2	0.15	0.012	0.069	0.081	0.06	1.81	NB	0.033	--
Thallium	0.19	0.013	0.00073	0.006	0.0067	0.005	0.074	0.74	0.067	0.0067
Vanadium	47	2.8	0.18	1.3	1.5	1.1	0.21	2.1	$\boxed{5.2}$	0.52
Zinc	220	16	0.86	7.4	8.3	6.1	160	320	0.038	0.019

Note: Hazard quotients greater than or equal to 1.0 are boxed.

-- - hazard quotient could not be calculated because there was no TRV available
BW - body weight
CoPC - chemical of potential concern
dw - dry weight
LOAEL - lowest-observed-adverse-effect level
NB - no benchmark
NOAEL - no-observed-adverse-effect level
PAH - polycyclic aromatic hydrocarbon
PCB - polychlorinated biphenyl
TRV - toxicity reference value
ww - wet weight

The following data were used to develop this scenario: surface sediment and *Phragmites* data collected at marsh and upland reference site stations in 2004 (see Appendix Tables C-2, C-3, C-5, C-7, C-8 and C-9).

Exposure point concentrations are means of detected values. However, if a chemical was undetected in all samples, its concentration was estimated as one-half of the maximum detection limit.

Table F-15a. Muskrat EPC calculation based on media and prey CoPC data for reference marsh

Medium/Prey	Survey Station	Date	Sample ID	Field Replicate	Units	Original Data/ Intermediate Calculation	Arsenic Concentration
Sediment							
	TERRREF1	9/28/2004	SD0001	0	mg/kg		38.9
	TERRREF2	10/4/2004	SD0015	0	mg/kg		6.68
	TERRREF3	10/4/2004	SD0021	0	mg/kg		49.9
						Reference Mean	31.8
						Reference mean - 2 significant digits	32
Vegetation							
	TERRREF1	10/5/2004	PH0005	0	mg/kg		2.1 *J*
						Reference Mean	2.1 *J*

Note: Mean detected values used for 2004 reference marsh and upland surface sediment, and marsh *Phragmites* .

CoPC - chemical of potential concern
EPC - exposure point concentration
J - estimated value

Table F-16. Food web model results for red-tailed hawk based on media and prey CoPC data for OU-3 marsh

Analyte	Concentration: Sediment (mg/kg dw)	Concentration: Prey (mg/kg ww)	Daily Exposure: Sediment (mg/day)	Daily Exposure: Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	Area Use Adjusted Exposure (mg/kg-day)	TRV: NOAEL (mg/kg-day)	TRV: LOAEL (mg/kg-day)	Hazard Quotient: NOAEL Hazard Quotient	Hazard Quotient: LOAEL Hazard Quotient
Semivolatile Organic Compounds											
2,4,5-Trichlorophenol	0.0057	0.0055	0.000014	0.0016	0.0016	0.0013	0.0000044	NB	NB	--	--
2,4,6-Trichlorophenol	0.023	0.0044	0.000057	0.0012	0.0013	0.0011	0.0000037	NB	NB	--	--
2,4-Dichlorophenol	0.023	0.006	0.000057	0.0017	0.0018	0.0014	0.000005	NB	NB	--	--
2,4-Dimethylphenol	0.008	0.0065	0.00002	0.0018	0.0019	0.0015	0.0000053	NB	NB	--	--
2,4-Dinitrophenol	0.45	0.012	0.0011	0.0034	0.0045	0.0037	0.000013	NB	NB	--	--
2,4-Dinitrotoluene	0.035	0.0043	0.000086	0.0012	0.0013	0.0011	0.0000037	NB	NB	--	--
2,6-Dinitrotoluene	0.035	0.0035	0.000086	0.00099	0.0011	0.00088	0.000003	NB	NB	--	--
2-Chloronaphthalene	0.045	0.003	0.00011	0.00085	0.00096	0.00078	0.0000027	NB	NB	--	--
2-Chlorophenol	0.022	0.0055	0.000054	0.0016	0.0016	0.0013	0.0000046	NB	NB	--	--
2-Methyl-4,6-dinitrophenol	0.022	0.0075	0.000054	0.0021	0.0022	0.0018	0.0000061	0.454	NB	0.000014	--
2-Methylnaphthalene	0.018	0.00041	0.000044	0.00012	0.00016	0.00013	0.00000045	NB	NB	--	--
2-Methylphenol	0.029	0.027	0.000071	0.0076	0.0077	0.0063	0.000022	NB	NB	--	--
2-Nitroaniline	0.034	0.013	0.000084	0.0037	0.0038	0.0031	0.000011	NB	NB	--	--
2-Nitrophenol	0.033	0.0075	0.000081	0.0021	0.0022	0.0018	0.0000062	NB	NB	--	--
3,3'-Dichlorobenzidine	0.046	0.39	0.00011	0.11	0.11	0.09	0.00031	NB	NB	--	--
3-Nitroaniline	0.033	0.0045	0.000081	0.0013	0.0014	0.0011	0.0000038	NB	NB	--	--
4-Bromophenyl ether	0.018	0.0028	0.000044	0.00079	0.00084	0.00068	0.0000024	NB	NB	--	--
4-Chloro-3-methylphenol	0.027	0.049	0.000067	0.014	0.014	0.011	0.000039	NB	NB	--	--
4-Chloroaniline	0.027	0.003	0.000067	0.00085	0.00092	0.00075	0.0000026	NB	NB	--	--
4-Chlorophenyl-phenyl ether	0.025	0.0023	0.000062	0.00065	0.00071	0.00058	0.000002	NB	NB	--	--
4-Methylphenol	0.015	0.13	0.000037	0.037	0.037	0.03	0.0001	NB	NB	--	--
4-Nitroaniline	0.043	0.013	0.00011	0.0037	0.0038	0.0031	0.000011	NB	NB	--	--
4-Nitrophenol	0.38	0.0038	0.00094	0.0011	0.002	0.0016	0.0000057	NB	NB	--	--
Acenaphthene	0.0032	0.00012	0.0000079	0.000034	0.000042	0.000034	0.00000012	NB	NB	--	--
Acenaphthylene	0.012	0.00012	0.00003	0.000034	0.000064	0.000052	0.00000018	NB	NB	--	--
Acetophenone	0.046	0.02	0.00011	0.0057	0.0058	0.0047	0.000016	NB	NB	--	--
Anthracene	0.016	0.00009	0.000039	0.000025	0.000065	0.000053	0.00000018	NB	NB	--	--
Atrazine	0.028	0.49	0.000069	0.14	0.14	0.11	0.00039	NB	NB	--	--
Benz[a]anthracene	0.05	0.000029	0.00012	0.0000082	0.00013	0.00011	0.00000037	NB	NB	--	--
Benzaldehyde	0.1	0.37	0.00025	0.1	0.1	0.086	0.0003	NB	NB	--	--
Benzo[a]pyrene	0.06	0.000041	0.00015	0.000012	0.00016	0.00013	0.00000045	NB	NB	--	--
Benzo[b]fluoranthene	0.1	0.000024	0.00025	0.0000068	0.00025	0.00021	0.00000071	NB	NB	--	--
Benzo[ghi]perylene	0.06	0.00014	0.00015	0.00004	0.00019	0.00015	0.00000053	NB	NB	--	--
Benzo[k]fluoranthene	0.035	0.000043	0.000086	0.000012	0.000098	0.00008	0.00000028	NB	NB	--	--
Biphenyl	0.031	0.0024	0.000076	0.00068	0.00076	0.00062	0.0000021	NB	NB	--	--
bis[2-chloroethoxy]methane	0.017	0.0025	0.000042	0.00071	0.00075	0.00061	0.0000021	NB	NB	--	--
bis[2-chloroethyl]ether	0.017	0.0044	0.000042	0.0012	0.0013	0.0011	0.0000036	NB	NB	--	--
Bis[2-chloroisopropyl]ether	0.015	0.0055	0.000037	0.0016	0.0016	0.0013	0.0000045	NB	NB	--	--
bis[2-Ethylhexyl]phthalate	1	0.027	0.0025	0.0076	0.01	0.0083	0.000029	1.2	NB	0.000024	--
Butylbenzyl phthalate	0.011	0.007	0.000027	0.002	0.002	0.0016	0.0000057	NB	NB	--	--
Caprolactam	0.15	0.0065	0.00037	0.0018	0.0022	0.0018	0.0000062	NB	NB	--	--
Carbazole	0.008	0.017	0.00002	0.0048	0.0048	0.0039	0.000014	NB	NB	--	--
Chrysene	0.06	0.000043	0.00015	0.000012	0.00016	0.00013	0.00000045	NB	NB	--	--
Dibenz[a,h]anthracene	0.017	0.000042	0.000042	0.000012	0.000054	0.000044	0.00000015	NB	NB	--	--

Table F-16. (cont.)

Analyte	Concentration: Sediment (mg/kg dw)	Concentration: Prey (mg/kg ww)	Daily Exposure: Sediment (mg/day)	Daily Exposure: Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	Area Use Adjusted Exposure (mg/kg-day)	TRV: NOAEL (mg/kg-day)	TRV: LOAEL (mg/kg-day)	Hazard Quotient: NOAEL Hazard Quotient	Hazard Quotient: LOAEL Hazard Quotient
Dibenzofuran	0.0036	0.00014	0.0000089	0.00004	0.000048	0.00004	0.00000014	NB	NB	--	--
Diethyl phthalate	0.12	0.0047	0.0003	0.0013	0.0016	0.0013	0.0000046	NB	NB	--	--
Dimethyl phthalate	0.0062	0.0026	0.000015	0.00074	0.00075	0.00061	0.0000021	NB	NB	--	--
Di-n-butyl phthalate	0.5	0.11	0.0012	0.031	0.032	0.026	0.000091	NB	NB	--	--
Di-n-octyl phthalate	0.009	0.0065	0.000022	0.0018	0.0019	0.0015	0.0000053	NB	NB	--	--
Fluoranthene	0.09	0.000028	0.00022	0.0000079	0.00023	0.00019	0.00000065	NB	NB	--	--
Fluorene	0.0064	0.00014	0.000016	0.00004	0.000055	0.000045	0.00000016	NB	NB	--	--
Hexachlorobenzene	0.0028	0.003	0.0000069	0.00085	0.00086	0.0007	0.0000024	NB	NB	--	--
Hexachlorobutadiene	0.018	0.0043	0.000044	0.0012	0.0013	0.001	0.0000036	NB	NB	--	--
Hexachlorocyclopentadiene	0.19	2.5	0.00047	0.71	0.71	0.58	0.002	NB	NB	--	--
Hexachloroethane	0.028	0.0043	0.000069	0.0012	0.0013	0.0011	0.0000036	NB	NB	--	--
Indeno[1,2,3-cd]pyrene	0.06	0.000039	0.00015	0.000011	0.00016	0.00013	0.00000045	NB	NB	--	--
Isophorone	0.031	0.0029	0.000076	0.00082	0.0009	0.00073	0.0000025	NB	NB	--	--
Naphthalene	0.025	0.0028	0.000062	0.00079	0.00085	0.0007	0.0000024	NB	NB	--	--
Nitrobenzene	0.018	0.005	0.000044	0.0014	0.0015	0.0012	0.0000041	NB	NB	--	--
N-nitroso-di-n-propylamine	0.04	0.0041	0.000099	0.0012	0.0013	0.001	0.0000036	NB	NB	--	--
N-nitrosodiphenylamine	0.06	0.0048	0.00015	0.0014	0.0015	0.0012	0.0000043	NB	NB	--	--
Pentachlorophenol	0.015	0.016	0.000037	0.0045	0.0046	0.0037	0.000013	NB	NB	--	--
Phenanthrene	0.039	0.00033	0.000096	0.000093	0.00019	0.00015	0.00000054	NB	NB	--	--
Phenol	0.14	0.53	0.00034	0.15	0.15	0.12	0.00042	NB	NB	--	--
Pyrene	0.08	0.00018	0.0002	0.000051	0.00025	0.0002	0.0000007	NB	NB	--	--
Total PAHs	0.7	0.0039	0.0017	0.0011	0.0028	0.0023	0.000008	0.14	1.4	0.000057	0.0000057
Pesticides/PCBs											
4,4'-DDD	0.006	0.0005	0.000015	0.00014	0.00016	0.00013	0.00000044	57.9	NB	7.6E-09	--
4,4'-DDE	0.008	0.0007	0.00002	0.0002	0.00022	0.00018	0.00000062	82.9	NB	7.4E-09	--
4,4'-DDT	0.09	0.004	0.00022	0.0011	0.0014	0.0011	0.0000038	0.5	NB	0.0000076	--
Aldrin	0.01	0.00021	0.000025	0.000059	0.000084	0.000069	0.00000024	3.4	NB	0.00000007	--
alpha-Chlordane	0.0033	0.00037	0.0000081	0.0001	0.00011	0.000092	0.00000032	0.282	NB	0.0000011	--
alpha-Endosulfan	0.007	0.00042	0.000017	0.00012	0.00014	0.00011	0.00000038	NB	NB	--	--
alpha-Hexachlorocyclohexane	0.0009	0.0003	0.0000022	0.000085	0.000087	0.000071	0.00000025	NB	NB	--	--
beta-Endosulfan	0.0023	0.0024	0.0000057	0.00068	0.00068	0.00056	0.0000019	NB	NB	--	--
beta-Hexachlorocyclohexane	0.008	0.00022	0.00002	0.000062	0.000082	0.000067	0.00000023	NB	NB	--	--
delta-Hexachlorocyclohexane	0.0015	0.00035	0.0000037	0.000099	0.0001	0.000084	0.00000029	NB	NB	--	--
Dieldrin	0.011	0.014	0.000027	0.004	0.004	0.0033	0.000011	0.077	NB	0.00015	--
Endosulfan sulfate	0.033	0.00028	0.000081	0.000079	0.00016	0.00013	0.00000045	NB	NB	--	--
Endrin	0.007	0.0032	0.000017	0.00091	0.00092	0.00075	0.0000026	0.01	NB	0.00026	--
Endrin aldehyde	0.008	0.0005	0.00002	0.00014	0.00016	0.00013	0.00000046	NB	NB	--	--
Endrin ketone	0.03	0.00049	0.000074	0.00014	0.00021	0.00017	0.0000006	NB	NB	--	--
gamma-Chlordane	0.16	0.00065	0.00039	0.00018	0.00058	0.00047	0.0000016	0.282	NB	0.0000058	--
gamma-Hexachlorocyclohexane	0.004	0.00029	0.0000099	0.000082	0.000092	0.000075	0.00000026	42.5	NB	6.1E-09	--
Heptachlor	0.0083	0.00046	0.00002	0.00013	0.00015	0.00012	0.00000043	9.2	NB	4.6E-08	--
Heptachlor epoxide	0.019	0.0007	0.000047	0.0002	0.00024	0.0002	0.00000069	NB	NB	--	--
Methoxychlor	0.02	0.0011	0.000049	0.00031	0.00036	0.00029	0.000001	10	NB	0.0000001	--
Toxaphene	1.8	0.055	0.0044	0.016	0.02	0.016	0.000056	NB	NB	--	--
Polychlorinated biphenyls	4	0.04	0.0099	0.011	0.021	0.017	0.00006	0.41	1.8	0.00015	0.000033

Table F-16. (cont.)

Analyte	Concentration: Sediment (mg/kg dw)	Concentration: Prey (mg/kg ww)	Daily Exposure: Sediment (mg/day)	Daily Exposure: Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	Area Use Adjusted Exposure (mg/kg-day)	TRV: NOAEL (mg/kg-day)	TRV: LOAEL (mg/kg-day)	Hazard Quotient: NOAEL Hazard Quotient	Hazard Quotient: LOAEL Hazard Quotient
Inorganic Analytes											
Aluminum	11,000	510	27	140	170	140	0.48	120	NB	0.004	--
Antimony	12	0.0044	0.029	0.0012	0.03	0.025	0.000086	NB	NB	--	--
Arsenic	2,000	0.1	4.9	0.028	5	4	0.014	10	40	0.0014	0.00035
Barium	72	2.2	0.18	0.62	0.8	0.65	0.0023	21	42	0.00011	0.000054
Beryllium	0.6	0.001	0.0015	0.00028	0.0018	0.0014	0.000005	NB	NB	--	--
Cadmium	1.6	0.019	0.004	0.0054	0.0093	0.0076	0.000026	1.5	20	0.000018	0.0000013
Chromium	160	0.33	0.39	0.093	0.48	0.39	0.0014	0.86	4.3	0.0016	0.00032
Cobalt	9.4	0.051	0.023	0.014	0.038	0.031	0.00011	NB	NB	--	--
Copper	480	4.8	1.2	1.4	2.5	2.1	0.0072	47	62	0.00015	0.00012
Iron	42,000	76	100	21	120	100	0.35	NB	NB	--	--
Lead	210	0.32	0.53	0.091	0.62	0.5	0.0017	3.9	11	0.00045	0.00016
Manganese	360	8.4	0.89	2.4	3.3	2.7	0.0092	980	NB	0.0000094	--
Mercury	13	0.011	0.032	0.0031	0.035	0.029	0.0001	0.032	0.064	0.0031	0.0016
Nickel	54	0.8	0.13	0.23	0.36	0.29	0.001	77	110	0.000013	0.0000092
Selenium	2.7	0.25	0.0067	0.071	0.077	0.063	0.00022	0.4	0.8	0.00055	0.00027
Silver	24	0.013	0.059	0.0037	0.063	0.051	0.00018	NB	NB	--	--
Thallium	0.13	0.0013	0.00032	0.00037	0.00069	0.00056	0.0000019	0.24	24	0.0000081	8.1E-08
Vanadium	49	0.2	0.12	0.057	0.18	0.14	0.0005	11	NB	0.000045	--
Zinc	200	26	0.5	7.4	7.9	6.5	0.022	70	120	0.00032	0.00019

Note:
-- - hazard quotient could not be calculated because there was no TRV available
BW - body weight
CoPC - chemical of potential concern
dw - dry weight
LOAEL - lowest-observed-adverse-effect level
NB - no benchmark
NOAEL - no-observed-adverse-effect level
OU-3 - Operable Unit 3
PAH - polycyclic aromatic hydrocarbon
PCB - polychlorinated biphenyl
TRV - toxicity reference value
ww - wet weight

The following data were used to develop this scenario: surface sediment and mammals data collected at marsh and upland site stations in 2004 (see Appendix Tables C-2, C-3, C-5, C-14, C-15 and C-16).

Exposure point concentrations are means of detected values. However, if a chemical was undetected in all samples, its concentration was estimated as one-half of the maximum detection limit.

Table F-16a. Red-tailed hawk EPC calculation based on media and prey CoPC data for OU-3 marsh

Medium/Prey	Survey Station	Date	Sample ID	Field Replicate	Units	Original Data/ Intermediate Calculation	Arsenic Concentration
Sediment							
	11A	9/29/2004	SD0006	0	mg/kg		31.6
	12	10/4/2004	SD0016	0	mg/kg		1,470
	13	10/4/2004	SD0019	0	mg/kg		67.5
	13A	9/28/2004	SD0002	0	mg/kg		9.34
	14	10/4/2004	SD0020	0	mg/kg		43.2
	16	9/29/2004	SD0007	0	mg/kg		1,050
	17	10/4/2004	SD0017D	1	mg/kg	15,000	
	17	10/4/2004	SD0017D	2	mg/kg	20,500	
						Field Rep. Average	17,750
	18A	9/28/2004	SD0004	0	mg/kg		12
	19	9/29/2004	SD0005	0	mg/kg		16.6
	22	9/28/2004	SD0003	0	mg/kg		34.3
						OU-3 Mean	2,048
						OU-3 mean - 3 significant figures	2,000
Small Mammal							
	11A	9/28/2004	SM0003	0	mg/kg		0.27 *J*
	13A	9/28/2004	SM0002	0	mg/kg		0.053 *J*
	14A	9/29/2004	SM0005	0	mg/kg		0.023 *J*
	14A	10/1/2004	SM0006	0	mg/kg		0.084 *J*
	22	9/28/2004	SM0004	0	mg/kg		0.088 *J*
						OU-3 Mean	0.1 *J*

Note: Mean detected values used for 2004 marsh and upland surface sediment and mammals.

CoPC - chemical of potential concern
EPC - exposure point concentration
J - estimated value

Table F-17. Food web model results for red-tailed hawk based on media and prey CoPC data for reference marsh

	Concentration		Daily Exposure				TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Prey (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Semivolatile Organic Compounds										
2,4,5-Trichlorophenol	0.003	0.0055	0.0000074	0.0016	0.0016	0.0013	NB	NB	--	--
2,4,6-Trichlorophenol	0.0018	0.0044	0.0000044	0.0012	0.0012	0.001	NB	NB	--	--
2,4-Dichlorophenol	0.0018	0.006	0.0000044	0.0017	0.0017	0.0014	NB	NB	--	--
2,4-Dimethylphenol	0.0055	0.0065	0.000014	0.0018	0.0019	0.0015	NB	NB	--	--
2,4-Dinitrophenol	0.036	0.012	0.000089	0.0034	0.0035	0.0028	NB	NB	--	--
2,4-Dinitrotoluene	0.0028	0.0043	0.0000069	0.0012	0.0012	0.001	NB	NB	--	--
2,6-Dinitrotoluene	0.0028	0.0035	0.0000069	0.00099	0.001	0.00081	NB	NB	--	--
2-Chloronaphthalene	0.0036	0.003	0.0000089	0.00085	0.00086	0.0007	NB	NB	--	--
2-Chlorophenol	0.0017	0.0055	0.0000042	0.0016	0.0016	0.0013	NB	NB	--	--
2-Methyl-4,6-dinitrophenol	0.0017	0.0075	0.0000042	0.0021	0.0021	0.0017	0.454	NB	0.0038	--
2-Methylnaphthalene	0.0083	0.00047	0.00002	0.00013	0.00015	0.00013	NB	NB	--	--
2-Methylphenol	0.0034	0.027	0.0000084	0.0076	0.0076	0.0062	NB	NB	--	--
2-Nitroaniline	0.0027	0.013	0.0000067	0.0037	0.0037	0.003	NB	NB	--	--
2-Nitrophenol	0.0026	0.0075	0.0000064	0.0021	0.0021	0.0017	NB	NB	--	--
3,3'-Dichlorobenzidine	0.0037	0.39	0.0000091	0.11	0.11	0.09	NB	NB	--	--
3-Nitroaniline	0.0026	0.0045	0.0000064	0.0013	0.0013	0.001	NB	NB	--	--
4-Bromophenyl ether	0.0014	0.0028	0.0000034	0.00079	0.0008	0.00065	NB	NB	--	--
4-Chloro-3-methylphenol	0.0021	0.05	0.0000052	0.014	0.014	0.012	NB	NB	--	--
4-Chloroaniline	0.0021	0.003	0.0000052	0.00085	0.00085	0.0007	NB	NB	--	--
4-Chlorophenyl-phenyl ether	0.002	0.0023	0.0000049	0.00065	0.00066	0.00054	NB	NB	--	--
4-Methylphenol	0.0029	0.19	0.0000071	0.054	0.054	0.044	NB	NB	--	--
4-Nitroaniline	0.0034	0.013	0.0000084	0.0037	0.0037	0.003	NB	NB	--	--
4-Nitrophenol	0.03	0.0038	0.000074	0.0011	0.0011	0.00094	NB	NB	--	--
Acenaphthene	0.0032	0.00016	0.0000079	0.000045	0.000053	0.000043	NB	NB	--	--
Acenaphthylene	0.01	0.000075	0.000025	0.000021	0.000046	0.000037	NB	NB	--	--
Acetophenone	0.012	0.02	0.00003	0.0057	0.0057	0.0046	NB	NB	--	--
Anthracene	0.01	0.00018	0.000025	0.000051	0.000076	0.000062	NB	NB	--	--
Atrazine	0.0022	0.3	0.0000054	0.085	0.085	0.069	NB	NB	--	--
Benz[a]anthracene	0.045	0.00069	0.00011	0.0002	0.00031	0.00025	NB	NB	--	--
Benzaldehyde	0.019	0.37	0.000047	0.1	0.1	0.086	NB	NB	--	--
Benzo[a]pyrene	0.057	0.000041	0.00014	0.000012	0.00015	0.00012	NB	NB	--	--
Benzo[b]fluoranthene	0.08	0.000024	0.0002	0.0000068	0.0002	0.00017	NB	NB	--	--
Benzo[ghi]perylene	0.043	0.00024	0.00011	0.000068	0.00017	0.00014	NB	NB	--	--
Benzo[k]fluoranthene	0.029	0.000043	0.000071	0.000012	0.000084	0.000068	NB	NB	--	--
Biphenyl	0.0048	0.0024	0.000012	0.00068	0.00069	0.00056	NB	NB	--	--
bis[2-chloroethoxy]methane	0.0013	0.0025	0.0000032	0.00071	0.00071	0.00058	NB	NB	--	--
bis[2-chloroethyl]ether	0.0024	0.0044	0.0000059	0.0012	0.0013	0.001	NB	NB	--	--
Bis[2-chloroisopropyl]ether	0.0012	0.0055	0.000003	0.0016	0.0016	0.0013	NB	NB	--	--
bis[2-Ethylhexyl]phthalate	0.16	0.23	0.00039	0.065	0.065	0.054	1.2	NB	0.045	--
Butylbenzyl phthalate	0.012	0.007	0.00003	0.002	0.002	0.0016	NB	NB	--	--
Caprolactam	0.012	0.0065	0.00003	0.0018	0.0019	0.0015	NB	NB	--	--
Carbazole	0.0049	0.017	0.000012	0.0048	0.0048	0.0039	NB	NB	--	--
Chrysene	0.061	0.00049	0.00015	0.00014	0.00029	0.00024	NB	NB	--	--

Table F-17. (cont.)

Analyte	Concentration		Daily Exposure				TRV		Hazard Quotient	
	Sediment (mg/kg dw)	Prey (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Dibenz[a,h]anthracene	0.014	0.000042	0.000034	0.000012	0.000046	0.000038	NB	NB	--	--
Dibenzofuran	0.003	0.00015	0.0000074	0.000042	0.00005	0.000041	NB	NB	--	--
Diethyl phthalate	0.0035	0.0047	0.0000086	0.0013	0.0013	0.0011	NB	NB	--	--
Dimethyl phthalate	0.0018	0.0026	0.0000044	0.00074	0.00074	0.0006	NB	NB	--	--
Di-n-butyl phthalate	0.012	0.008	0.00003	0.0023	0.0023	0.0019	NB	NB	--	--
Di-n-octyl phthalate	0.0037	0.0065	0.0000091	0.0018	0.0018	0.0015	NB	NB	--	--
Fluoranthene	0.1	0.0014	0.00025	0.0004	0.00064	0.00052	NB	NB	--	--
Fluorene	0.0045	0.00016	0.000011	0.000045	0.000056	0.000046	NB	NB	--	--
Hexachlorobenzene	0.0021	0.061	0.0000052	0.017	0.017	0.014	NB	NB	--	--
Hexachlorobutadiene	0.0014	0.0043	0.0000034	0.0012	0.0012	0.001	NB	NB	--	--
Hexachlorocyclopentadiene	0.015	2.5	0.000037	0.71	0.71	0.58	NB	NB	--	--
Hexachloroethane	0.0022	0.0043	0.0000054	0.0012	0.0012	0.001	NB	NB	--	--
Indeno[1,2,3-cd]pyrene	0.044	0.000039	0.00011	0.000011	0.00012	0.000098	NB	NB	--	--
Isophorone	0.0016	0.0029	0.0000039	0.00082	0.00082	0.00067	NB	NB	--	--
Naphthalene	0.011	0.0026	0.000027	0.00074	0.00076	0.00062	NB	NB	--	--
Nitrobenzene	0.002	0.005	0.0000049	0.0014	0.0014	0.0012	NB	NB	--	--
N-nitroso-di-n-propylamine	0.0032	0.0041	0.0000079	0.0012	0.0012	0.00095	NB	NB	--	--
N-nitrosodiphenylamine	0.0022	0.0048	0.0000054	0.0014	0.0014	0.0011	NB	NB	--	--
Pentachlorophenol	0.0085	0.016	0.000021	0.0045	0.0045	0.0037	NB	NB	--	--
Phenanthrene	0.038	0.0006	0.000094	0.00017	0.00026	0.00022	NB	NB	--	--
Phenol	0.0055	0.89	0.000014	0.25	0.25	0.21	NB	NB	--	--
Pyrene	0.08	0.00047	0.0002	0.00013	0.00033	0.00027	NB	NB	--	--
Total PAHs	0.61	0.0076	0.0015	0.0022	0.0037	0.003	0.14	1.4	0.021	0.0021
Pesticides/PCBs										
4,4'-DDD	0.0028	0.0005	0.0000069	0.00014	0.00015	0.00012	57.9	NB	0.0000021	--
4,4'-DDE	0.0059	0.00006	0.000015	0.000017	0.000032	0.000026	82.9	NB	0.00000031	--
4,4'-DDT	0.022	0.001	0.000054	0.00028	0.00034	0.00028	0.5	NB	0.00055	--
Aldrin	0.0005	0.0001	0.0000012	0.000028	0.00003	0.000024	3.4	NB	0.0000071	--
alpha-Chlordane	0.005	0.00018	0.000012	0.000051	0.000063	0.000052	0.282	NB	0.00018	--
alpha-Endosulfan	0.0075	0.000065	0.000018	0.000018	0.000037	0.00003	NB	NB	--	--
alpha-Hexachlorocyclohexane	0.00028	0.00008	0.00000069	0.000023	0.000023	0.000019	NB	NB	--	--
beta-Endosulfan	0.0016	0.00018	0.0000039	0.000051	0.000055	0.000045	NB	NB	--	--
beta-Hexachlorocyclohexane	0.0038	0.00027	0.0000094	0.000076	0.000086	0.00007	NB	NB	--	--
delta-Hexachlorocyclohexane	0.0007	0.00017	0.0000017	0.000048	0.00005	0.000041	NB	NB	--	--
Dieldrin	0.016	0.0005	0.000039	0.00014	0.00018	0.00015	0.077	NB	0.0019	--
Endosulfan sulfate	0.00065	0.00014	0.0000016	0.00004	0.000041	0.000034	NB	NB	--	--
Endrin	0.00024	0.001	0.00000059	0.00028	0.00028	0.00023	0.01	NB	0.023	--
Endrin aldehyde	0.0007	0.000085	0.0000017	0.000024	0.000026	0.000021	NB	NB	--	--
Endrin ketone	0.0039	0.00015	0.0000096	0.000042	0.000052	0.000043	NB	NB	--	--
gamma-Chlordane	0.014	0.00039	0.000034	0.00011	0.00014	0.00012	0.282	NB	0.00042	--
gamma-Hexachlorocyclohexane	0.0001	0.00016	0.00000025	0.000045	0.000046	0.000037	42.5	NB	0.00000088	--
Heptachlor	0.00035	0.00023	0.00000086	0.000065	0.000066	0.000054	9.2	NB	0.0000059	--
Heptachlor epoxide	0.0014	0.00053	0.0000034	0.00015	0.00015	0.00013	NB	NB	--	--
Methoxychlor	0.0031	0.0005	0.0000076	0.00014	0.00015	0.00012	10	NB	0.000012	--

Table F-17. (cont.)

Analyte	Concentration: Sediment (mg/kg dw)	Concentration: Prey (mg/kg ww)	Daily Exposure: Sediment (mg/day)	Daily Exposure: Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV: NOAEL (mg/kg-day)	TRV: LOAEL (mg/kg-day)	Hazard Quotient: NOAEL Hazard Quotient	Hazard Quotient: LOAEL Hazard Quotient
Toxaphene	0.07	0.026	0.00017	0.0074	0.0075	0.0062	NB	NB	--	--
Polychlorinated biphenyls	0.38	0.0024	0.00094	0.00068	0.0016	0.0013	0.41	1.8	0.0032	0.00073
Inorganic Analytes										
Aluminum	9,600	240	24	67	90	74	120	NB	0.62	--
Antimony	2.3	0.003	0.0056	0.00085	0.0064	0.0053	NB	NB	--	--
Arsenic	32	0.055	0.078	0.016	0.094	0.077	10	40	0.0077	0.0019
Barium	43	3	0.11	0.85	0.96	0.78	21	42	0.037	0.019
Beryllium	0.8	0.00096	0.002	0.00027	0.0022	0.0018	NB	NB	--	--
Cadmium	1.4	0.019	0.0034	0.0054	0.0088	0.0072	1.5	20	0.0048	0.00036
Chromium	55	0.33	0.14	0.093	0.23	0.19	0.86	4.3	0.22	0.044
Cobalt	9.5	0.032	0.023	0.0091	0.032	0.027	NB	NB	--	--
Copper	190	3.6	0.47	1	1.5	1.2	47	62	0.026	0.02
Iron	21,000	67	51	19	70	57	NB	NB	--	--
Lead	140	0.21	0.35	0.059	0.41	0.34	3.9	11	0.086	0.031
Manganese	360	4.9	0.89	1.4	2.3	1.9	980	NB	0.0019	--
Mercury	0.8	0.0039	0.002	0.0011	0.0031	0.0025	0.032	0.064	0.078	0.039
Nickel	34	0.56	0.083	0.16	0.24	0.2	77	110	0.0026	0.0018
Selenium	3.2	0.24	0.0079	0.068	0.076	0.062	0.4	0.8	0.15	0.077
Silver	3.2	0.0041	0.0079	0.0012	0.009	0.0074	NB	NB	--	--
Thallium	0.19	0.0011	0.00047	0.00031	0.00078	0.00064	0.24	24	0.0027	0.000027
Vanadium	47	0.12	0.11	0.034	0.15	0.12	11	NB	0.011	--
Zinc	220	27	0.55	7.5	8.1	6.6	70	120	0.094	0.055

Note:

--	-	hazard quotient could not be calculated because there was no TRV available
BW	-	body weight
CoPC	-	chemical of potential concern
dw	-	dry weight
LOAEL	-	lowest-observed-adverse-effect level
NB	-	no benchmark
NOAEL	-	no-observed-adverse-effect level
PAH	-	polycyclic aromatic hydrocarbon
PCB	-	polychlorinated biphenyl
TRV	-	toxicity reference value
ww	-	wet weight

The following data were used to develop this scenario: surface sediment data collected at marsh and upland reference site stations and mammals collected at marsh reference site stations in 2004 (see Appendix Tables C-2, C-3, C-5, C-14, C-15 and C-16).

Exposure point concentrations are means of detected values. However, if a chemical was undetected in all samples, its concentration was estimated as one-half of the maximum detection limit.

Table F-17a. Red-tailed hawk EPC calculation based on media and prey CoPC data for reference marsh

Medium/Prey	Survey Station	Date	Sample ID	Field Replicate	Units	Original Data/ Intermediate Calculation	Arsenic Concentration
Sediment							
	TERRREF1	9/28/2004	SD0001	0	mg/kg		38.9
	TERRREF2	10/4/2004	SD0015	0	mg/kg		6.68
	TERRREF3	10/4/2004	SD0021	0	mg/kg		49.9
						Reference Mean	31.8
						Reference mean - 2 significant digits	32
Small Mammal							
	TERRREF1	9/28/2004	SM0001	0	mg/kg		0.055 *J*
						Reference Mean	0.055 *J*

Note: Mean detected values used for 2004 reference marsh and upland surface sediment, and marsh mammals.

CoPC - chemical of potential concern
EPC - exposure point concentration
J - estimated value

Table F-18. Food web model results for marsh wren based on media and prey CoPC data for marsh Station 11A

Analyte	Concentration Sediment (mg/kg dw)	Concentration Insects (mg/kg ww)	Concentration Blackworms (mg/kg ww)	Daily Exposure Sediment (mg/day)	Daily Exposure Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV NOAEL (mg/kg-day)	TRV LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Pesticides/PCBs											
4,4'-DDD	0.0028	0.00055	0.0019	0.00000076	0.0000062	0.000007	0.0007	57.9	NB	0.000012	--
4,4'-DDE	0.0032	0.00055	0.0038	0.00000087	0.000008	0.0000088	0.00088	82.9	NB	0.000011	--
4,4'-DDT	0.064	0.0041	0.026	0.000017	0.000057	0.000075	0.0075	0.5	NB	0.015	--
Aldrin	0.027	0.00011	0.012	0.0000074	0.000012	0.000019	0.0019	3.4	NB	0.00056	--
alpha-Chlordane	0.00039	0.00089	0.0026	0.00000011	0.0000097	0.0000098	0.00098	0.282	NB	0.0035	--
alpha-Endosulfan	0.013	0.00055	0.0025	0.0000035	0.0000068	0.00001	0.001	NB	NB	--	--
alpha-Hexachlorocyclohexane	0.00055	0.000085	0.0031	0.00000015	0.0000035	0.0000037	0.00037	NB	NB	--	--
beta-Endosulfan	0.0031	0.0013	0.0012	0.00000085	0.000012	0.000013	0.0013	NB	NB	--	--
beta-Hexachlorocyclohexane	0.013	0.00011	0.0006	0.0000035	0.0000014	0.000005	0.0005	NB	NB	--	--
delta-Hexachlorocyclohexane	0.0031	0.00018	0.0012	0.00000085	0.0000026	0.0000034	0.00034	NB	NB	--	--
Dieldrin	0.0031	0.0014	0.0012	0.00000085	0.000013	0.000013	0.0013	0.077	NB	0.017	--
Endosulfan sulfate	0.0013	0.00055	0.00031	0.00000035	0.0000048	0.0000051	0.00051	NB	NB	--	--
Endrin	0.0015	0.0033	0.0035	0.00000041	0.00003	0.000031	0.0031	0.01	NB	0.31	--
Endrin aldehyde	0.006	0.00026	0.00025	0.0000016	0.0000024	0.000004	0.0004	NB	NB	--	--
Endrin ketone	0.013	0.00065	0.00033	0.0000035	0.0000056	0.0000092	0.00092	NB	NB	--	--
gamma-Chlordane	0.033	0.0038	0.037	0.000009	0.000065	0.000074	0.0074	0.282	NB	0.026	--
gamma-Hexachlorocyclohexane	0.0039	0.00015	0.00032	0.0000011	0.0000015	0.0000026	0.00026	42.5	NB	0.0000061	--
Heptachlor	0.0019	0.00086	0.00055	0.00000052	0.0000076	0.0000081	0.00081	9.2	NB	0.000088	--
Heptachlor epoxide	0.0037	0.002	0.0024	0.000001	0.000019	0.00002	0.002	NB	NB	--	--
Methoxychlor	0.0032	0.00014	0.00031	0.00000087	0.0000014	0.0000023	0.00023	10	NB	0.000023	--
Toxaphene	0.41	0.024	0.12	0.00011	0.00031	0.00042	0.042	NB	NB	--	--
Polychlorinated biphenyls	2.2	0.075	2.2	0.0006	0.0026	0.0032	0.32	0.41	1.8	0.79	0.18
Inorganic Analytes											
Aluminum	10,000	90	310	2.8	1	3.9	390	120	NB	3.2	--
Antimony	0.58	0.022	0.21	0.00016	0.00037	0.00053	0.053	NB	NB	--	--
Arsenic	32	0.59	1.6	0.0086	0.0063	0.015	1.5	10	40	0.15	0.037
Barium	47	1.2	7.5	0.013	0.017	0.029	2.9	21	42	0.14	0.07
Beryllium	0.51	0.0028	0.0095	0.00014	0.000032	0.00017	0.017	NB	NB	--	--
Cadmium	3.2	0.91	0.57	0.00088	0.008	0.0089	0.89	1.5	20	0.59	0.044
Chromium	310	0.89	3.1	0.085	0.01	0.095	9.5	0.86	4.3	11	2.2
Cobalt	6.5	0.093	0.22	0.0018	0.00096	0.0027	0.27	NB	NB	--	--
Copper	380	42	49	0.1	0.39	0.49	49	47	62	1	0.79
Iron	32,000	170	550	8.7	1.9	11	1,100	NB	NB	--	--
Lead	240	0.74	4.2	0.064	0.0099	0.074	7.4	3.9	11	1.9	0.68
Manganese	140	12	4.4	0.038	0.1	0.14	14	980	NB	0.014	--
Mercury	3.6	0.047	0.33	0.00098	0.00069	0.0017	0.17	0.032	0.064	5.2	2.6
Nickel	50	0.72	1.4	0.014	0.0072	0.021	2.1	77	110	0.027	0.019
Selenium	0.4	0.2	0.21	0.00011	0.0018	0.0019	0.19	0.4	0.8	0.49	0.24
Silver	48	0.53	3.2	0.013	0.0073	0.02	2	NB	NB	--	--
Thallium	0.067	0.0026	0.033	0.000018	0.000051	0.00007	0.007	0.24	24	0.029	0.00029
Vanadium	34	0.24	0.57	0.0093	0.0025	0.012	1.2	11	NB	0.11	--
Zinc	77	55	40	0.021	0.49	0.51	51	70	120	0.73	0.43

Footnotes on following page.

Table F-18. (cont.)

Note: Hazard quotients greater than or equal to 1.0 are boxed.

--	-	hazard quotient could not be calculated because there was no TRV available
BW	-	body weight
CoPC	-	chemical of potential concern
dw	-	dry weight
LOAEL	-	lowest-observed-adverse-effect level
NB	-	no benchmark
NOAEL	-	no-observed-adverse-effect level
PCB	-	polychlorinated biphenyl
TRV	-	toxicity reference value
ww	-	wet weight

The following data were used to develop this scenario: surface sediment and blackworm data collected at station 11A in 2004 (see Appendix Tables C-3, C-5, C-29 and C-30) and terrestrial insect data collected at the site in 2004 (see Appendix Tables C-11 and C-12). Because only one terrestrial insects composite sample was collected for the whole site, the results for this sample are used to represent insect concentrations in all site models for the marsh wren.

Table F-19. Food web model results for marsh wren based on media and prey CoPC data for marsh Station 12

Analyte	Concentration: Sediment (mg/kg dw)	Concentration: Insects[a] (mg/kg ww)	Daily Exposure: Sediment (mg/day)	Daily Exposure: Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV: NOAEL (mg/kg-day)	TRV: LOAEL (mg/kg-day)	Hazard Quotient: NOAEL Hazard Quotient	Hazard Quotient: LOAEL Hazard Quotient
Pesticides/PCBs										
4,4'-DDD	0.0062	0.00055	0.0000017	0.000005	0.0000067	0.00067	57.9	NB	0.000012	--
4,4'-DDE	0.0028	0.00055	0.00000076	0.000005	0.0000058	0.00058	82.9	NB	0.000007	--
4,4'-DDT	0.041	0.0041	0.000011	0.000037	0.000049	0.0049	0.5	NB	0.0097	--
Aldrin	0.00055	0.00011	0.00000015	0.000001	0.0000012	0.00012	3.4	NB	0.000034	--
alpha-Chlordane	0.0042	0.00089	0.0000011	0.0000081	0.0000093	0.00093	0.282	NB	0.0033	--
alpha-Endosulfan	0.0011	0.00055	0.0000003	0.000005	0.0000053	0.00053	NB	NB	--	--
alpha-Hexachlorocyclohexane	0.0014	0.000085	0.00000038	0.00000077	0.0000012	0.00012	NB	NB	--	--
beta-Endosulfan	0.003	0.0013	0.00000082	0.000012	0.000013	0.0013	NB	NB	--	--
beta-Hexachlorocyclohexane	0.00046	0.00011	0.00000013	0.000001	0.0000011	0.00011	NB	NB	--	--
delta-Hexachlorocyclohexane	0.0015	0.00018	0.00000041	0.0000016	0.000002	0.0002	NB	NB	--	--
Dieldrin	0.0065	0.0014	0.0000018	0.000013	0.000015	0.0015	0.077	NB	0.019	--
Endosulfan sulfate	0.0013	0.00055	0.00000035	0.000005	0.0000054	0.00054	NB	NB	--	--
Endrin	0.0011	0.0033	0.0000003	0.00003	0.00003	0.003	0.01	NB	0.3	--
Endrin aldehyde	0.0078	0.00026	0.0000021	0.0000024	0.0000045	0.00045	NB	NB	--	--
Endrin ketone	0.006	0.00065	0.0000016	0.0000059	0.0000076	0.00076	NB	NB	--	--
gamma-Chlordane	0.036	0.0038	0.0000098	0.000035	0.000044	0.0044	0.282	NB	0.016	--
gamma-Hexachlorocyclohexane	0.00021	0.00015	0.000000057	0.0000014	0.0000014	0.00014	42.5	NB	0.0000034	--
Heptachlor	0.0002	0.00086	0.000000055	0.0000078	0.0000079	0.00079	9.2	NB	0.000086	--
Heptachlor epoxide	0.041	0.002	0.000011	0.000018	0.000029	0.0029	NB	NB	--	--
Methoxychlor	0.022	0.00014	0.000006	0.0000013	0.0000073	0.00073	10	NB	0.000073	--
Toxaphene	0.12	0.024	0.000033	0.00022	0.00025	0.025	NB	NB	--	--
Polychlorinated biphenyls	2.6	0.075	0.00071	0.00068	0.0014	0.14	0.41	1.8	0.34	0.077
Inorganic Analytes										
Aluminum	19,000	90	5.1	0.82	5.9	590	120	NB	4.9	--
Antimony	1.5	0.022	0.00041	0.0002	0.00062	0.062	NB	NB	--	--
Arsenic	1,500	0.59	0.4	0.0054	0.41	41	10	40	4.1	1
Barium	130	1.2	0.035	0.011	0.046	4.6	21	42	0.22	0.11
Beryllium	0.94	0.0028	0.00026	0.000026	0.00028	0.028	NB	NB	--	--
Cadmium	3	0.91	0.00081	0.0083	0.0091	0.91	1.5	20	0.61	0.045
Chromium	110	0.89	0.029	0.0081	0.037	3.7	0.86	4.3	4.3	0.86
Cobalt	11	0.093	0.0029	0.00085	0.0037	0.37	NB	NB	--	--
Copper	290	42	0.078	0.38	0.46	46	47	62	0.98	0.74
Iron	36,000	170	9.7	1.5	11	1,100	NB	NB	--	--
Lead	190	0.74	0.052	0.0067	0.059	5.9	3.9	11	1.5	0.54
Manganese	240	12	0.065	0.11	0.17	17	980	NB	0.018	--
Mercury	21	0.047	0.0056	0.00043	0.006	0.6	0.032	0.064	19	9.4
Nickel	35	0.72	0.0096	0.0066	0.016	1.6	77	110	0.021	0.015
Selenium	7.4	0.2	0.002	0.0018	0.0038	0.38	0.4	0.8	0.96	0.48
Silver	6.2	0.53	0.0017	0.0048	0.0065	0.65	NB	NB	--	--
Thallium	0.13	0.0026	0.000035	0.000024	0.000059	0.0059	0.24	24	0.025	0.00025
Vanadium	58	0.24	0.016	0.0022	0.018	1.8	11	NB	0.16	--
Zinc	440	55	0.12	0.5	0.62	62	70	120	0.89	0.52

Footnotes on following page.

Table F-19. (cont.)

Note: Hazard quotients greater than or equal to 1.0 are boxed.

--	-	hazard quotient could not be calculated because there was no TRV available
BW	-	body weight
CoPC	-	chemical of potential concern
dw	-	dry weight
LOAEL	-	lowest-observed-adverse-effect level
NB	-	no benchmark
NOAEL	-	no-observed-adverse-effect level
PCB	-	polychlorinated biphenyl
TRV	-	toxicity reference value
ww	-	wet weight

The following data were used to develop this scenario:

The following data were used to develop this scenario: surface sediment data collected at station 12 in 2004 (see Appendix Tables C-3, C-5) and terrestrial insect data collected at the site in 2004 (see Appendix Tables C-11 and C-12). Because only one terrestrial insects composite sample was collected for the whole site, the results for this sample are used to represent insect concentrations in all site models for the marsh wren.

[a] Worms not analyzed from this location, so diet modeled using insect data only

Table F-20. Food web model results for marsh wren based on media and prey CoPC data for marsh Station 13

Analyte	Concentration			Daily Exposure		Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV		Hazard Quotient	
	Sediment (mg/kg dw)	Insects (mg/kg ww)	Blackworms (mg/kg ww)	Sediment (mg/day)	Food (mg/day)			NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Pesticides/PCBs											
4,4'-DDD	0.00065	0.00055	0.0035	0.00000018	0.0000077	0.0000079	0.00079	57.9	NB	0.000014	--
4,4'-DDE	0.0091	0.00055	0.017	0.0000025	0.00002	0.000022	0.0022	82.9	NB	0.000027	--
4,4'-DDT	0.067	0.0041	0.02	0.000018	0.000052	0.00007	0.007	0.5	NB	0.014	--
Aldrin	0.0011	0.00011	0.00034	0.0000003	0.0000012	0.0000015	0.00015	3.4	NB	0.000044	--
alpha-Chlordane	0.0026	0.00089	0.00065	0.00000071	0.0000079	0.0000086	0.00086	0.282	NB	0.003	--
alpha-Endosulfan	0.0007	0.00055	0.0012	0.00000019	0.0000056	0.0000058	0.00058	NB	NB	--	--
alpha-Hexachlorocyclohexane	0.00092	0.000085	0.0017	0.00000025	0.0000022	0.0000025	0.00025	NB	NB	--	--
beta-Endosulfan	0.0025	0.0013	0.0006	0.00000068	0.000011	0.000012	0.0012	NB	NB	--	--
beta-Hexachlorocyclohexane	0.0011	0.00011	0.0017	0.0000003	0.0000025	0.0000028	0.00028	NB	NB	--	--
delta-Hexachlorocyclohexane	0.0009	0.00018	0.0006	0.00000025	0.000002	0.0000023	0.00023	NB	NB	--	--
Dieldrin	0.0019	0.0014	0.0017	0.00000052	0.000013	0.000014	0.0014	0.077	NB	0.018	--
Endosulfan sulfate	0.0035	0.00055	0.00046	0.00000096	0.0000049	0.0000059	0.00059	NB	NB	--	--
Endrin	0.00025	0.0033	0.0017	0.000000068	0.000029	0.000029	0.0029	0.01	NB	0.29	--
Endrin aldehyde	0.0074	0.00026	0.00029	0.000002	0.0000024	0.0000044	0.00044	NB	NB	--	--
Endrin ketone	0.005	0.00065	0.00065	0.0000014	0.0000059	0.0000073	0.00073	NB	NB	--	--
gamma-Chlordane	0.0021	0.0038	0.0017	0.00000057	0.000033	0.000033	0.0033	0.282	NB	0.012	--
gamma-Hexachlorocyclohexane	0.0012	0.00015	0.00048	0.00000033	0.0000017	0.000002	0.0002	42.5	NB	0.0000047	--
Heptachlor	0.0001	0.00086	0.0008	0.000000027	0.0000078	0.0000078	0.00078	9.2	NB	0.000085	--
Heptachlor epoxide	0.0012	0.002	0.0017	0.00000033	0.000018	0.000018	0.0018	NB	NB	--	--
Methoxychlor	0.0013	0.00014	0.0011	0.00000035	0.0000021	0.0000025	0.00025	10	NB	0.000025	--
Toxaphene	0.12	0.024	0.085	0.000033	0.00027	0.00031	0.031	NB	NB	--	--
Polychlorinated biphenyls	0.57	0.075	0.28	0.00016	0.00087	0.001	0.1	0.41	1.8	0.25	0.057
Inorganic Analytes											
Aluminum	14,000	90	160	3.8	0.88	4.7	470	120	NB	3.9	--
Antimony	1.6	0.022	0.044	0.00043	0.00022	0.00065	0.065	NB	NB	--	--
Arsenic	68	0.59	4	0.018	0.0085	0.027	2.7	10	40	0.27	0.067
Barium	67	1.2	6.1	0.018	0.015	0.034	3.4	21	42	0.16	0.08
Beryllium	0.49	0.0028	0.0048	0.00013	0.000027	0.00016	0.016	NB	NB	--	--
Cadmium	0.13	0.91	0.089	0.000035	0.0075	0.0076	0.76	1.5	20	0.51	0.038
Chromium	47	0.89	0.32	0.013	0.0076	0.02	2	0.86	4.3	2.4	0.48
Cobalt	6.9	0.093	0.14	0.0019	0.00089	0.0028	0.28	NB	NB	--	--
Copper	480	42	22	0.13	0.36	0.49	49	47	62	1.1	0.8
Iron	37,000	170	310	10	1.7	12	1,200	NB	NB	--	--
Lead	180	0.74	0.94	0.049	0.0069	0.056	5.6	3.9	11	1.4	0.51
Manganese	230	12	2	0.061	0.099	0.16	16	980	NB	0.016	--
Mercury	0.88	0.047	1.8	0.00024	0.002	0.0023	0.23	0.032	0.064	7.1	3.5
Nickel	11	0.72	0.29	0.003	0.0062	0.0092	0.92	77	110	0.012	0.0083
Selenium	2.7	0.2	0.19	0.00074	0.0018	0.0025	0.25	0.4	0.8	0.64	0.32
Silver	3.9	0.53	0.65	0.0011	0.0049	0.006	0.6	NB	NB	--	--
Thallium	0.13	0.0026	0.0064	0.000035	0.000027	0.000063	0.0063	0.24	24	0.026	0.00026
Vanadium	67	0.24	0.54	0.018	0.0025	0.021	2.1	11	NB	0.19	--
Zinc	95	55	38	0.026	0.49	0.51	51	70	120	0.74	0.43

Footnotes on following page.

Table F-20. (cont.)

Note: Hazard quotients greater than or equal to 1.0 are boxed.

--	-	hazard quotient could not be calculated because there was no TRV available
BW	-	body weight
CoPC	-	chemical of potential concern
dw	-	dry weight
LOAEL	-	lowest-observed-adverse-effect level
NB	-	no benchmark
NOAEL	-	no-observed-adverse-effect level
PCB	-	polychlorinated biphenyl
TRV	-	toxicity reference value
ww	-	wet weight

The following data were used to develop this scenario: surface sediment and blackworm data collected at station 13 in 2004 (see Appendix Tables C-3, C-5, C-29 and C-30) and terrestrial insect data collected at the site in 2004 (see Appendix Tables C-11 and C-12). Because only one terrestrial insects composite sample was collected for the whole site, the results for this sample are used to represent insect concentrations in all site models for the marsh wren.

Table F-21. Food web model results for marsh wren based on media and prey CoPC data for marsh Station 13A

	Concentration			Daily Exposure				TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Insects (mg/kg ww)	Blackworms (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Pesticides/PCBs											
4,4'-DDD	0.00051	0.00055	0.00091	0.00000014	0.0000053	0.0000055	0.00055	57.9	NB	0.0000095	--
4,4'-DDE	0.0008	0.00055	0.00095	0.00000022	0.0000054	0.0000056	0.00056	82.9	NB	0.0000067	--
4,4'-DDT	0.0022	0.0041	0.0012	0.0000006	0.000035	0.000035	0.0035	0.5	NB	0.0071	--
Aldrin	0.00015	0.00011	0.00019	0.000000041	0.0000011	0.0000011	0.00011	3.4	NB	0.000033	--
alpha-Chlordane	0.00035	0.00089	0.00065	0.000000096	0.0000079	0.000008	0.0008	0.282	NB	0.0028	--
alpha-Endosulfan	0.000065	0.00055	0.00015	0.000000018	0.0000046	0.0000047	0.00047	NB	NB	--	--
alpha-Hexachlorocyclohexane	0.000048	0.000085	0.0064	0.000000013	0.0000065	0.0000065	0.00065	NB	NB	--	--
beta-Endosulfan	0.000035	0.0013	0.00034	9.6E-09	0.000011	0.000011	0.0011	NB	NB	--	--
beta-Hexachlorocyclohexane	0.0088	0.00011	0.0012	0.0000024	0.000002	0.0000044	0.00044	NB	NB	--	--
delta-Hexachlorocyclohexane	0.00008	0.00018	0.0019	0.000000022	0.0000032	0.0000032	0.00032	NB	NB	--	--
Dieldrin	0.00029	0.0014	0.0016	0.000000079	0.000013	0.000013	0.0013	0.077	NB	0.017	--
Endosulfan sulfate	0.00012	0.00055	0.00026	0.000000033	0.0000047	0.0000048	0.00048	NB	NB	--	--
Endrin	0.00014	0.0033	0.00034	0.000000038	0.000027	0.000027	0.0027	0.01	NB	0.27	--
Endrin aldehyde	0.00054	0.00026	0.00048	0.00000015	0.0000026	0.0000027	0.00027	NB	NB	--	--
Endrin ketone	0.0032	0.00065	0.0043	0.00000087	0.0000092	0.00001	0.001	NB	NB	--	--
gamma-Chlordane	0.0003	0.0038	0.00014	0.000000082	0.000031	0.000031	0.0031	0.282	NB	0.011	--
gamma-Hexachlorocyclohexane	0.00006	0.00015	0.00027	0.000000016	0.0000015	0.0000015	0.00015	42.5	NB	0.0000035	--
Heptachlor	0.00006	0.00086	0.00043	0.000000016	0.0000074	0.0000075	0.00075	9.2	NB	0.000081	--
Heptachlor epoxide	0.00008	0.002	0.001	0.000000022	0.000017	0.000017	0.0017	NB	NB	--	--
Methoxychlor	0.00029	0.00014	0.0005	0.000000079	0.0000016	0.0000017	0.00017	10	NB	0.000017	--
Toxaphene	0.007	0.024	0.048	0.0000019	0.00024	0.00024	0.024	NB	NB	--	--
Polychlorinated biphenyls	0.036	0.075	0.064	0.0000098	0.00067	0.00068	0.068	0.41	1.8	0.17	0.038
Inorganic Analytes											
Aluminum	3,800	90	610	1	1.3	2.3	230	120	NB	1.9	--
Antimony	0.23	0.022	0.04	0.000063	0.00022	0.00028	0.028	NB	NB	--	--
Arsenic	9.3	0.59	5.6	0.0025	0.0099	0.012	1.2	10	40	0.12	0.031
Barium	10	1.2	6.8	0.0027	0.016	0.019	1.9	21	42	0.089	0.045
Beryllium	0.25	0.0028	0.02	0.000068	0.000041	0.00011	0.011	NB	NB	--	--
Cadmium	0.14	0.91	0.16	0.000038	0.0076	0.0076	0.76	1.5	20	0.51	0.038
Chromium	14	0.89	0.97	0.0038	0.0082	0.012	1.2	0.86	4.3	1.4	0.28
Cobalt	1.6	0.093	0.23	0.00044	0.00097	0.0014	0.14	NB	NB	--	--
Copper	16	42	4.7	0.0043	0.35	0.35	35	47	62	0.75	0.57
Iron	10,000	170	710	2.7	2	4.7	470	NB	NB	--	--
Lead	37	0.74	6.7	0.01	0.012	0.022	2.2	3.9	11	0.57	0.2
Manganese	42	12	4.2	0.011	0.1	0.11	11	980	NB	0.012	--
Mercury	0.073	0.047	0.062	0.00002	0.00044	0.00046	0.046	0.032	0.064	1.4	0.72
Nickel	1.8	0.72	0.6	0.0005	0.0064	0.0069	0.69	77	110	0.009	0.0063
Selenium	0.3	0.2	0.12	0.000082	0.0017	0.0018	0.18	0.4	0.8	0.46	0.23
Silver	0.5	0.53	0.2	0.00014	0.0045	0.0047	0.47	NB	NB	--	--
Thallium	0.022	0.0026	0.0052	0.000006	0.000026	0.000032	0.0032	0.24	24	0.013	0.00013
Vanadium	13	0.24	1.6	0.0035	0.0034	0.007	0.7	11	NB	0.063	--
Zinc	43	55	29	0.012	0.48	0.49	49	70	120	0.7	0.41

Footnotes on following page.

Table F-21. (cont.)

Note: Hazard quotients greater than or equal to 1.0 are boxed.

--	-	hazard quotient could not be calculated because there was no TRV available
BW	-	body weight
CoPC	-	chemical of potential concern
dw	-	dry weight
LOAEL	-	lowest-observed-adverse-effect level
NB	-	no benchmark
NOAEL	-	no-observed-adverse-effect level
PCB	-	polychlorinated biphenyl
TRV	-	toxicity reference value
ww	-	wet weight

The following data were used to develop this scenario: surface sediment and blackworm data collected at station 13A in 2004 (see Appendix Tables C-3, C-5, C-29 and C-30) and terrestrial insect data collected at the site in 2004 (see Appendix Tables C-11 and C-12). Because only one terrestrial insects composite sample was collected for the whole site, the results for this sample are used to represent insect concentrations in all site models for the marsh wren.

Table F-22. Food web model results for marsh wren based on media and prey CoPC data for marsh Station 14

	Concentration			Daily Exposure				TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Insects (mg/kg ww)	Blackworms (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Pesticides/PCBs[a]											
4,4'-DDD	0.013	0.00055	0.00055	0.0000035	0.000005	0.0000086	0.00086	57.9	NB	0.000015	--
4,4'-DDE	0.014	0.00055	0.00055	0.0000038	0.000005	0.0000088	0.00088	82.9	NB	0.000011	--
4,4'-DDT	0.025	0.0041	0.0041	0.0000068	0.000037	0.000044	0.0044	0.5	NB	0.0088	--
Aldrin	0.004	0.00011	0.00011	0.0000011	0.000001	0.0000021	0.00021	3.4	NB	0.000062	--
alpha-Chlordane	0.0062	0.00089	0.00089	0.0000017	0.0000081	0.0000098	0.00098	0.282	NB	0.0035	--
alpha-Endosulfan	0.0056	0.00055	0.00055	0.0000015	0.000005	0.0000065	0.00065	NB	NB	--	--
alpha-Hexachlorocyclohexane	0.00082	0.000085	0.000085	0.00000022	0.00000077	0.000001	0.0001	NB	NB	--	--
beta-Endosulfan	0.0027	0.0013	0.0013	0.00000074	0.000012	0.000013	0.0013	NB	NB	--	--
beta-Hexachlorocyclohexane	0.0033	0.00011	0.00011	0.0000009	0.000001	0.0000019	0.00019	NB	NB	--	--
delta-Hexachlorocyclohexane	0.00032	0.00018	0.00018	0.000000087	0.0000016	0.0000017	0.00017	NB	NB	--	--
Dieldrin	0.019	0.0014	0.0014	0.0000052	0.000013	0.000018	0.0018	0.077	NB	0.023	--
Endosulfan sulfate	0.0012	0.00055	0.00055	0.00000033	0.000005	0.0000053	0.00053	NB	NB	--	--
Endrin	0.0012	0.0033	0.0033	0.00000033	0.00003	0.00003	0.003	0.01	NB	0.3	--
Endrin aldehyde	0.0031	0.00026	0.00026	0.00000085	0.0000024	0.0000032	0.00032	NB	NB	--	--
Endrin ketone	0.0012	0.00065	0.00065	0.00000033	0.0000059	0.0000062	0.00062	NB	NB	--	--
gamma-Chlordane	0.013	0.0038	0.0038	0.0000035	0.000035	0.000038	0.0038	0.282	NB	0.014	--
gamma-Hexachlorocyclohexane	0.00023	0.00015	0.00015	0.000000063	0.0000014	0.0000014	0.00014	42.5	NB	0.0000034	--
Heptachlor	0.00023	0.00086	0.00086	0.000000063	0.0000078	0.0000079	0.00079	9.2	NB	0.000086	--
Heptachlor epoxide	0.0066	0.002	0.002	0.0000018	0.000018	0.00002	0.002	NB	NB	--	--
Methoxychlor	0.0012	0.00014	0.00014	0.00000033	0.0000013	0.0000016	0.00016	10	NB	0.000016	--
Toxaphene	0.17	0.024	0.024	0.000046	0.00022	0.00027	0.027	NB	NB	--	--
Polychlorinated biphenyls	0.87	0.075	0.075	0.00024	0.00068	0.00092	0.092	0.41	1.8	0.22	0.051
Inorganic Analytes											
Aluminum	14,000	90	390	3.7	1.1	4.8	480	120	NB	4	--
Antimony	1.1	0.022	0.022	0.0003	0.0002	0.0005	0.05	NB	NB	--	--
Arsenic	43	0.59	3.6	0.012	0.0081	0.02	2	10	40	0.2	0.05
Barium	56	1.2	12	0.015	0.021	0.036	3.6	21	42	0.17	0.087
Beryllium	1.5	0.0028	0.025	0.00041	0.000046	0.00046	0.046	NB	NB	--	--
Cadmium	0.99	0.91	0.54	0.00027	0.008	0.0082	0.82	1.5	20	0.55	0.041
Chromium	250	0.89	3	0.067	0.01	0.077	7.7	0.86	4.3	8.9	1.8
Cobalt	30	0.093	0.7	0.0081	0.0014	0.0095	0.95	NB	NB	--	--
Copper	1200	42	32	0.34	0.37	0.71	71	47	62	1.5	1.1
Iron	51,000	170	790	14	2.1	16	1,600	NB	NB	--	--
Lead	240	0.74	2.4	0.065	0.0083	0.074	7.4	3.9	11	1.9	0.67
Manganese	1400	12	5.5	0.39	0.1	0.5	50	980	NB	0.051	--
Mercury	2.8	0.047	0.1	0.00077	0.00048	0.0012	0.12	0.032	0.064	3.9	1.9
Nickel	63	0.72	1.6	0.017	0.0074	0.025	2.5	77	110	0.032	0.022
Selenium	4.5	0.2	0.22	0.0012	0.0018	0.0031	0.31	0.4	0.8	0.77	0.38
Silver	24	0.53	0.21	0.0064	0.0045	0.011	1.1	NB	NB	--	--
Thallium	0.088	0.0026	0.0036	0.000024	0.000025	0.000049	0.0049	0.24	24	0.02	0.0002
Vanadium	88	0.24	1.4	0.024	0.0032	0.027	2.7	11	NB	0.25	--
Zinc	340	55	38	0.094	0.49	0.58	58	70	120	0.83	0.49

Footnotes on following page.

Table F-22. (cont.)

Note: Hazard quotients greater than or equal to 1.0 are boxed.

--	-	hazard quotient could not be calculated because there was no TRV available
BW	-	body weight
CoPC	-	chemical of potential concern
dw	-	dry weight
LOAEL	-	lowest-observed-adverse-effect level
NB	-	no benchmark
NOAEL	-	no-observed-adverse-effect level
PCB	-	polychlorinated biphenyl
TRV	-	toxicity reference value
ww	-	wet weight

The following data were used to develop this scenario:

The following data were used to develop this scenario: surface sediment and blackworm data collected at station 14 in 2004 (see Appendix Tables C-3, C-5 and C-30) and terrestrial insect data collected at the site in 2004 (see Appendix Tables C-11 and C-12). Because only one terrestrial insects composite sample was collected for the whole site, the results for this sample are used to represent insect concentrations in all site models for the marsh wren.

[a] Pesticides/PCBs were not analyzed in blackworms at this station, and therefore insect concentrations were used as surrogate values for calculations

Table F-23. Food web model results for marsh wren based on media and prey CoPC data for marsh Station 16

	Concentration			Daily Exposure				TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Insects (mg/kg ww)	Blackworms (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Pesticides/PCBs											
4,4'-DDD	0.00065	0.00055	0.0019	0.00000018	0.0000062	0.0000064	0.00064	57.9	NB	0.000011	--
4,4'-DDE	0.0035	0.00055	0.011	0.00000096	0.000015	0.000015	0.0015	82.9	NB	0.000019	--
4,4'-DDT	0.025	0.0041	0.012	0.0000068	0.000045	0.000051	0.0051	0.5	NB	0.01	--
Aldrin	0.0018	0.00011	0.0019	0.00000049	0.0000026	0.0000031	0.00031	3.4	NB	0.000092	--
alpha-Chlordane	0.0016	0.00089	0.0012	0.00000044	0.0000084	0.0000088	0.00088	0.282	NB	0.0031	--
alpha-Endosulfan	0.0035	0.00055	0.00024	0.00000096	0.0000047	0.0000057	0.00057	NB	NB	--	--
alpha-Hexachlorocyclohexane	0.0006	0.000085	0.0028	0.00000016	0.0000032	0.0000034	0.00034	NB	NB	--	--
beta-Endosulfan	0.0065	0.0013	0.0028	0.0000018	0.000013	0.000015	0.0015	NB	NB	--	--
beta-Hexachlorocyclohexane	0.0016	0.00011	0.00038	0.00000044	0.0000012	0.0000017	0.00017	NB	NB	--	--
delta-Hexachlorocyclohexane	0.001	0.00018	0.00065	0.00000027	0.0000021	0.0000023	0.00023	NB	NB	--	--
Dieldrin	0.02	0.0014	0.0019	0.0000055	0.000013	0.000019	0.0019	0.077	NB	0.024	--
Endosulfan sulfate	0.0015	0.00055	0.00049	0.00000041	0.000005	0.0000054	0.00054	NB	NB	--	--
Endrin	0.013	0.0033	0.0023	0.0000035	0.000029	0.000033	0.0033	0.01	NB	0.33	--
Endrin aldehyde	0.0048	0.00026	0.0019	0.0000013	0.0000039	0.0000052	0.00052	NB	NB	--	--
Endrin ketone	0.019	0.00065	0.0019	0.0000052	0.0000071	0.000012	0.0012	NB	NB	--	--
gamma-Chlordane	0.039	0.0038	0.028	0.000011	0.000057	0.000067	0.0067	0.282	NB	0.024	--
gamma-Hexachlorocyclohexane	0.0007	0.00015	0.00075	0.00000019	0.0000019	0.0000021	0.00021	42.5	NB	0.000005	--
Heptachlor	0.0007	0.00086	0.00085	0.00000019	0.0000078	0.000008	0.0008	9.2	NB	0.000087	--
Heptachlor epoxide	0.027	0.002	0.032	0.0000074	0.000046	0.000053	0.0053	NB	NB	--	--
Methoxychlor	0.0014	0.00014	0.00049	0.00000038	0.0000016	0.000002	0.0002	10	NB	0.00002	--
Toxaphene	0.6	0.024	0.19	0.00016	0.00037	0.00053	0.053	NB	NB	--	--
Polychlorinated biphenyls	1.2	0.075	2.1	0.00033	0.0025	0.0029	0.29	0.41	1.8	0.7	0.16
Inorganic Analytes											
Aluminum	14,000	90	290	3.8	1	4.8	480	120	NB	4	--
Antimony	0.71	0.022	0.034	0.00019	0.00021	0.00041	0.041	NB	NB	--	--
Arsenic	1,100	0.59	57	0.29	0.057	0.34	34	10	40	3.4	0.86
Barium	92	1.2	7	0.025	0.016	0.041	4.1	21	42	0.2	0.099
Beryllium	0.32	0.0028	0.0091	0.000087	0.000031	0.00012	0.012	NB	NB	--	--
Cadmium	0.46	0.91	0.14	0.00013	0.0076	0.0077	0.77	1.5	20	0.51	0.039
Chromium	77	0.89	1.1	0.021	0.0083	0.029	2.9	0.86	4.3	3.4	0.68
Cobalt	7.5	0.093	0.21	0.002	0.00095	0.003	0.3	NB	NB	--	--
Copper	110	42	8.2	0.031	0.35	0.38	38	47	62	0.81	0.62
Iron	24,000	170	460	6.5	1.8	8.3	830	NB	NB	--	--
Lead	180	0.74	2.3	0.048	0.0082	0.056	5.6	3.9	11	1.4	0.51
Manganese	230	12	3.1	0.063	0.1	0.16	16	980	NB	0.017	--
Mercury	16	0.047	39	0.0042	0.036	0.04	4	0.032	0.064	130	63
Nickel	9	0.72	0.51	0.0025	0.0064	0.0088	0.88	77	110	0.011	0.008
Selenium	1.7	0.2	0.16	0.00046	0.0018	0.0022	0.22	0.4	0.8	0.56	0.28
Silver	4	0.53	0.24	0.0011	0.0046	0.0057	0.57	NB	NB	--	--
Thallium	0.05	0.0026	0.0084	0.000014	0.000029	0.000043	0.0043	0.24	24	0.018	0.00018
Vanadium	45	0.24	0.83	0.012	0.0027	0.015	1.5	11	NB	0.14	--
Zinc	180	55	34	0.05	0.49	0.54	54	70	120	0.77	0.45

Footnotes on following page.

Table F-23. (cont.)

Note: Hazard quotients greater than or equal to 1.0 are boxed.

--	-	hazard quotient could not be calculated because there was no TRV available
BW	-	body weight
CoPC	-	chemical of potential concern
dw	-	dry weight
LOAEL	-	lowest-observed-adverse-effect level
NB	-	no benchmark
NOAEL	-	no-observed-adverse-effect level
PCB	-	polychlorinated biphenyl
TRV	-	toxicity reference value
ww	-	wet weight

The following data were used to develop this scenario: surface sediment and blackworm data collected at station 16 in 2004 (see Appendix Tables C-3, C-5, C-29 and C-30) and terrestrial insect data collected at the site in 2004 (see Appendix Tables C-11 and C-12). Because only one terrestrial insects composite sample was collected for the whole site, the results for this sample are used to represent insect concentrations in all site models for the marsh wren.

Table F-24. Food web model results for marsh wren based on media and prey CoPC data for marsh Station 17

Analyte	Concentration: Sediment (mg/kg dw)	Concentration: Insects (mg/kg ww)	Concentration: Blackworms (mg/kg ww)	Daily Exposure: Sediment (mg/day)	Daily Exposure: Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV: NOAEL (mg/kg-day)	TRV: LOAEL (mg/kg-day)	Hazard Quotient: NOAEL Hazard Quotient	Hazard Quotient: LOAEL Hazard Quotient
Pesticides/PCBs											
4,4'-DDD	0.0088	0.00055	0.0015	0.0000024	0.0000059	0.0000083	0.00083	57.9	NB	0.000014	--
4,4'-DDE	0.0045	0.00055	0.015	0.0000012	0.000018	0.000019	0.0019	82.9	NB	0.000023	--
4,4'-DDT	0.19	0.0041	0.029	0.000052	0.00006	0.00011	0.011	0.5	NB	0.022	--
Aldrin	0.0011	0.00011	0.0015	0.0000003	0.0000023	0.0000026	0.00026	3.4	NB	0.000076	--
alpha-Chlordane	0.0083	0.00089	0.0021	0.0000023	0.0000092	0.000011	0.0011	0.282	NB	0.0041	--
alpha-Endosulfan	0.0011	0.00055	0.0015	0.0000003	0.0000059	0.0000062	0.00062	NB	NB	--	--
alpha-Hexachlorocyclohexane	0.0002	0.000085	0.00023	0.000000055	0.00000091	0.00000096	0.000096	NB	NB	--	--
beta-Endosulfan	0.006	0.0013	0.012	0.0000016	0.000022	0.000023	0.0023	NB	NB	--	--
beta-Hexachlorocyclohexane	0.00048	0.00011	0.0003	0.00000013	0.0000012	0.0000013	0.00013	NB	NB	--	--
delta-Hexachlorocyclohexane	0.0011	0.00018	0.00049	0.0000003	0.0000019	0.0000022	0.00022	NB	NB	--	--
Dieldrin	0.023	0.0014	0.0015	0.0000063	0.000013	0.000019	0.0019	0.077	NB	0.025	--
Endosulfan sulfate	0.033	0.00055	0.00039	0.000009	0.0000049	0.000014	0.0014	NB	NB	--	--
Endrin	0.0015	0.0033	0.0023	0.00000041	0.000029	0.00003	0.003	0.01	NB	0.3	--
Endrin aldehyde	0.011	0.00026	0.0015	0.000003	0.0000035	0.0000065	0.00065	NB	NB	--	--
Endrin ketone	0.1	0.00065	0.00042	0.000027	0.0000057	0.000033	0.0033	NB	NB	--	--
gamma-Chlordane	0.16	0.0038	0.029	0.000044	0.000058	0.0001	0.01	0.282	NB	0.036	--
gamma-Hexachlorocyclohexane	0.0011	0.00015	0.00048	0.0000003	0.0000017	0.000002	0.0002	42.5	NB	0.0000046	--
Heptachlor	0.0083	0.00086	0.00065	0.0000023	0.0000076	0.0000099	0.00099	9.2	NB	0.00011	--
Heptachlor epoxide	0.015	0.002	0.016	0.0000041	0.000031	0.000035	0.0035	NB	NB	--	--
Methoxychlor	0.014	0.00014	0.0015	0.0000038	0.0000025	0.0000063	0.00063	10	NB	0.000063	--
Toxaphene	0.6	0.024	0.11	0.00016	0.0003	0.00046	0.046	NB	NB	--	--
Polychlorinated biphenyls	7.2	0.075	1.3	0.002	0.0018	0.0038	0.38	0.41	1.8	0.92	0.21
Inorganic Analytes											
Aluminum	5,100	90	34	1.4	0.77	2.2	220	120	NB	1.8	--
Antimony	12	0.022	0.028	0.0032	0.00021	0.0034	0.34	NB	NB	--	--
Arsenic	18,000	0.59	58	4.9	0.057	4.9	490	10	40	49	12
Barium	100	1.2	3.3	0.028	0.013	0.041	4.1	21	42	0.2	0.098
Beryllium	0.24	0.0028	0.0015	0.000066	0.000024	0.00009	0.009	NB	NB	--	--
Cadmium	2.9	0.91	0.058	0.0008	0.0075	0.0083	0.83	1.5	20	0.55	0.042
Chromium	110	0.89	0.15	0.029	0.0074	0.037	3.7	0.86	4.3	4.3	0.86
Cobalt	15	0.093	0.12	0.0041	0.00087	0.005	0.5	NB	NB	--	--
Copper	570	42	2.3	0.15	0.35	0.5	50	47	62	1.1	0.81
Iron	100,000	170	240	28	1.6	29	2,900	NB	NB	--	--
Lead	280	0.74	0.6	0.076	0.0066	0.082	8.2	3.9	11	2.1	0.75
Manganese	770	12	1.5	0.21	0.099	0.31	31	980	NB	0.032	--
Mercury	68	0.047	1.1	0.019	0.0014	0.02	2	0.032	0.064	62	31
Nickel	77	0.72	0.37	0.021	0.0062	0.027	2.7	77	110	0.035	0.025
Selenium	7.2	0.2	0.12	0.002	0.0017	0.0037	0.37	0.4	0.8	0.93	0.46
Silver	12	0.53	0.035	0.0034	0.0044	0.0078	0.78	NB	NB	--	--
Thallium	0.093	0.0026	0.0046	0.000025	0.000026	0.000051	0.0051	0.24	24	0.021	0.00021
Vanadium	61	0.24	0.22	0.017	0.0022	0.019	1.9	11	NB	0.17	--
Zinc	480	55	26	0.13	0.48	0.61	61	70	120	0.87	0.51

Footnotes on following page.

Table F-24. (cont.)

Note: Hazard quotients greater than or equal to 1.0 are boxed.

--	-	hazard quotient could not be calculated because there was no TRV available
BW	-	body weight
CoPC	-	chemical of potential concern
dw	-	dry weight
LOAEL	-	lowest-observed-adverse-effect level
NB	-	no benchmark
NOAEL	-	no-observed-adverse-effect level
PCB	-	polychlorinated biphenyl
TRV	-	toxicity reference value
ww	-	wet weight

The following data were used to develop this scenario: surface sediment and blackworm data collected at station 17 in 2004 (see Appendix Tables C-3, C-5, C-29 and C-30) and terrestrial insect data collected at the site in 2004 see (Appendix Tables C-11 and C-12). Because only one terrestrial insects composite sample was collected for the whole site, the results for this sample are used to represent insect concentrations in all site models for the marsh wren.

Table F-24a. Marsh wren EPC calculation based on media and prey CoPC data for marsh Station 17

Medium/Prey	Survey Station	Date	Sample ID	Field Replicate	Units	Original Data/ Intermediate Calculation	Arsenic Concentration
Sediment							
	17	10/4/2004	SD0017D	1	mg/kg	15,000	
	17	10/4/2004	SD0017D	2	mg/kg	20,500	
						Field Rep. Average	17,750
						Station 17 Mean	17,750
						Station 17 mean - 3 significant digits	17,800
Insect							
	SITE	10/7/2004	TI0001	0	mg/kg		0.59
						Site Mean	0.59
Blackworm							
	17	10/4/2004	SD0017-BW	0	mg/kg		57.6
						Station 17 Mean	57.6

Note: Because only one terrestrial insect composite sample was collected for the whole site, the results for this sample are used to represent insect concentrations in all site models for the marsh wren.

Blackworm (*Lumbriculus variegatus*) data were from Day 28 of the bioaccumulation test for this station.

CoPC - chemical of potential concern
EPC - exposure point concentration

Table F-25. Food web model results for marsh wren based on media and prey CoPC data for marsh Station 18A

Analyte	Concentration: Sediment (mg/kg dw)	Concentration: Insects (mg/kg ww)	Concentration: Blackworms (mg/kg ww)	Daily Exposure: Sediment (mg/day)	Daily Exposure: Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV: NOAEL (mg/kg-day)	TRV: LOAEL (mg/kg-day)	Hazard Quotient: NOAEL Hazard Quotient	Hazard Quotient: LOAEL Hazard Quotient
Pesticides/PCBs											
4,4'-DDD	0.00085	0.00055	0.00019	0.00000023	0.0000047	0.0000049	0.00049	57.9	NB	0.0000085	--
4,4'-DDE	0.0003	0.00055	0.0015	0.000000082	0.0000059	0.000006	0.0006	82.9	NB	0.0000072	--
4,4'-DDT	0.0067	0.0041	0.0017	0.0000018	0.000035	0.000037	0.0037	0.5	NB	0.0074	--
Aldrin	0.00015	0.00011	0.0015	0.000000041	0.0000023	0.0000023	0.00023	3.4	NB	0.000068	--
alpha-Chlordane	0.0003	0.00089	0.00055	0.000000082	0.0000078	0.0000079	0.00079	0.282	NB	0.0028	--
alpha-Endosulfan	0.0021	0.00055	0.00019	0.00000057	0.0000047	0.0000053	0.00053	NB	NB	--	--
alpha-Hexachlorocyclohexane	0.00005	0.000085	0.0015	0.000000014	0.0000021	0.0000021	0.00021	NB	NB	--	--
beta-Endosulfan	0.0023	0.0013	0.00055	0.00000063	0.000011	0.000012	0.0012	NB	NB	--	--
beta-Hexachlorocyclohexane	0.0026	0.00011	0.0019	0.00000071	0.0000026	0.0000033	0.00033	NB	NB	--	--
delta-Hexachlorocyclohexane	0.000085	0.00018	0.0005	0.000000023	0.0000019	0.000002	0.0002	NB	NB	--	--
Dieldrin	0.003	0.0014	0.00017	0.00000082	0.000012	0.000012	0.0012	0.077	NB	0.016	--
Endosulfan sulfate	0.00013	0.00055	0.0004	0.000000035	0.0000049	0.0000049	0.00049	NB	NB	--	--
Endrin	0.0018	0.0033	0.0012	0.00000049	0.000028	0.000029	0.0029	0.01	NB	0.29	--
Endrin aldehyde	0.000095	0.00026	0.00025	0.000000026	0.0000024	0.0000024	0.00024	NB	NB	--	--
Endrin ketone	0.0009	0.00065	0.00055	0.00000025	0.0000058	0.0000061	0.00061	NB	NB	--	--
gamma-Chlordane	0.00035	0.0038	0.0015	0.000000096	0.000033	0.000033	0.0033	0.282	NB	0.012	--
gamma-Hexachlorocyclohexane	0.00078	0.00015	0.0016	0.00000021	0.0000027	0.0000029	0.00029	42.5	NB	0.0000068	--
Heptachlor	0.000085	0.00086	0.0007	0.000000023	0.0000077	0.0000077	0.00077	9.2	NB	0.000084	--
Heptachlor epoxide	0.00055	0.002	0.0015	0.00000015	0.000018	0.000018	0.0018	NB	NB	--	--
Methoxychlor	0.0015	0.00014	0.0004	0.00000041	0.0000015	0.0000019	0.00019	10	NB	0.000019	--
Toxaphene	0.06	0.024	0.1	0.000016	0.00029	0.0003	0.03	NB	NB	--	--
Polychlorinated biphenyls	0.1	0.075	0.098	0.000027	0.0007	0.00073	0.073	0.41	1.8	0.18	0.041
Inorganic Analytes											
Aluminum	6,300	90	710	1.7	1.4	3.1	310	120	NB	$\boxed{2.6}$	--
Antimony	0.5	0.022	0.026	0.00014	0.0002	0.00034	0.034	NB	NB	--	--
Arsenic	12	0.59	1.1	0.0033	0.0058	0.0091	0.91	10	40	0.091	0.023
Barium	32	1.2	7.3	0.0087	0.016	0.025	2.5	21	42	0.12	0.06
Beryllium	0.3	0.0028	0.021	0.000082	0.000042	0.00012	0.012	NB	NB	--	--
Cadmium	0.091	0.91	0.076	0.000025	0.0075	0.0076	0.76	1.5	20	0.5	0.038
Chromium	78	0.89	2.6	0.021	0.0097	0.031	3.1	0.86	4.3	$\boxed{3.6}$	0.72
Cobalt	2.2	0.093	0.25	0.00061	0.00099	0.0016	0.16	NB	NB	--	--
Copper	60	42	4.7	0.016	0.35	0.36	36	47	62	0.77	0.59
Iron	56,000	170	750	15	2.1	17	1,700	NB	NB	--	--
Lead	140	0.74	16	0.039	0.02	0.06	6	3.9	11	$\boxed{1.5}$	0.54
Manganese	57	12	3	0.016	0.1	0.12	12	980	NB	0.012	--
Mercury	0.42	0.047	0.073	0.00011	0.00045	0.00057	0.057	0.032	0.064	$\boxed{1.8}$	0.89
Nickel	2.6	0.72	0.6	0.0007	0.0064	0.0072	0.72	77	110	0.0093	0.0065
Selenium	0.6	0.2	0.15	0.00016	0.0018	0.0019	0.19	0.4	0.8	0.49	0.24
Silver	4.8	0.53	0.77	0.0013	0.005	0.0064	0.64	NB	NB	--	--
Thallium	0.051	0.0026	0.0098	0.000014	0.00003	0.000044	0.0044	0.24	24	0.018	0.00018
Vanadium	53	0.24	1.1	0.015	0.003	0.017	1.7	11	NB	0.16	--
Zinc	51	55	27	0.014	0.48	0.49	49	70	120	0.7	0.41

Footnotes on following page.

Table F-25. (cont.)

Note: Hazard quotients greater than or equal to 1.0 are boxed.

--	-	hazard quotient could not be calculated because there was no TRV available
BW	-	body weight
CoPC	-	chemical of potential concern
dw	-	dry weight
LOAEL	-	lowest-observed-adverse-effect level
NB	-	no benchmark
NOAEL	-	no-observed-adverse-effect level
PCB	-	polychlorinated biphenyl
TRV	-	toxicity reference value
ww	-	wet weight

The following data were used to develop this scenario: surface sediment and blackworm data collected at station 18A in 2004 (see Appendix Tables C-3, C-5, C-29 and C-30) and terrestrial insect data collected at the site in 2004 (see Appendix Tables C-11 and C-12). Because only one terrestrial insects composite sample was collected for the whole site, the results for this sample are used to represent insect concentrations in all site models for the marsh wren.

Table F-26. Food web model results for marsh wren based on media and prey CoPC data for marsh Station 19

	Concentration			Daily Exposure				TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Insects (mg/kg ww)	Blackworms (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Pesticides/PCBs											
4,4'-DDD	0.00095	0.00055	0.0036	0.00000026	0.0000078	0.000008	0.0008	57.9	NB	0.000014	--
4,4'-DDE	0.0013	0.00055	0.0092	0.00000035	0.000013	0.000013	0.0013	82.9	NB	0.000016	--
4,4'-DDT	0.038	0.0041	0.017	0.00001	0.000049	0.000059	0.0059	0.5	NB	0.012	--
Aldrin	0.007	0.00011	0.0062	0.0000019	0.0000066	0.0000085	0.00085	3.4	NB	0.00025	--
alpha-Chlordane	0.0028	0.00089	0.00048	0.00000076	0.0000077	0.0000085	0.00085	0.282	NB	0.003	--
alpha-Endosulfan	0.0065	0.00055	0.0014	0.0000018	0.0000058	0.0000076	0.00076	NB	NB	--	--
alpha-Hexachlorocyclohexane	0.00036	0.000085	0.0038	0.000000098	0.0000042	0.0000043	0.00043	NB	NB	--	--
beta-Endosulfan	0.00095	0.0013	0.0014	0.00000026	0.000012	0.000012	0.0012	NB	NB	--	--
beta-Hexachlorocyclohexane	0.0015	0.00011	0.0014	0.00000041	0.0000022	0.0000026	0.00026	NB	NB	--	--
delta-Hexachlorocyclohexane	0.00026	0.00018	0.0026	0.000000071	0.0000038	0.0000039	0.00039	NB	NB	--	--
Dieldrin	0.0017	0.0014	0.0014	0.00000046	0.000013	0.000013	0.0013	0.077	NB	0.017	--
Endosulfan sulfate	0.00038	0.00055	0.00036	0.0000001	0.0000048	0.0000049	0.00049	NB	NB	--	--
Endrin	0.00095	0.0033	0.0011	0.00000026	0.000028	0.000028	0.0028	0.01	NB	0.28	--
Endrin aldehyde	0.0066	0.00026	0.0014	0.0000018	0.0000034	0.0000052	0.00052	NB	NB	--	--
Endrin ketone	0.0084	0.00065	0.00065	0.0000023	0.0000059	0.0000082	0.00082	NB	NB	--	--
gamma-Chlordane	0.015	0.0038	0.016	0.0000041	0.000046	0.00005	0.005	0.282	NB	0.018	--
gamma-Hexachlorocyclohexane	0.00018	0.00015	0.00038	0.000000049	0.0000016	0.0000016	0.00016	42.5	NB	0.0000038	--
Heptachlor	0.0002	0.00086	0.0006	0.000000055	0.0000076	0.0000077	0.00077	9.2	NB	0.000083	--
Heptachlor epoxide	0.0015	0.002	0.0021	0.00000041	0.000018	0.000019	0.0019	NB	NB	--	--
Methoxychlor	0.032	0.00014	0.0083	0.0000087	0.0000087	0.000017	0.0017	10	NB	0.00017	--
Toxaphene	0.28	0.024	0.11	0.000076	0.0003	0.00037	0.037	NB	NB	--	--
Polychlorinated biphenyls	1.4	0.075	1.1	0.00038	0.0016	0.002	0.2	0.41	1.8	0.49	0.11
Inorganic Analytes											
Aluminum	14,000	90	390	3.9	1.1	5	500	120	NB	$\boxed{4.1}$	--
Antimony	0.92	0.022	0.022	0.00025	0.0002	0.00045	0.045	NB	NB	--	--
Arsenic	17	0.59	1	0.0045	0.0057	0.01	1	10	40	0.1	0.026
Barium	64	1.2	7	0.017	0.016	0.034	3.4	21	42	0.16	0.08
Beryllium	0.72	0.0028	0.012	0.0002	0.000034	0.00023	0.023	NB	NB	--	--
Cadmium	0.86	0.91	0.37	0.00023	0.0078	0.008	0.8	1.5	20	0.54	0.04
Chromium	310	0.89	2.4	0.085	0.0095	0.094	9.4	0.86	4.3	$\boxed{11}$	$\boxed{2.2}$
Cobalt	5.2	0.093	0.21	0.0014	0.00095	0.0024	0.24	NB	NB	--	--
Copper	1,100	42	48	0.31	0.39	0.7	70	47	62	$\boxed{1.5}$	1.1
Iron	29,000	170	360	8	1.7	9.7	970	NB	NB	--	--
Lead	340	0.74	3.9	0.092	0.0096	0.1	10	3.9	11	$\boxed{2.6}$	0.92
Manganese	160	12	1.8	0.042	0.099	0.14	14	980	NB	0.014	--
Mercury	8.9	0.047	3.2	0.0024	0.0033	0.0057	0.57	0.032	0.064	$\boxed{18}$	$\boxed{8.9}$
Nickel	15	0.72	0.83	0.0041	0.0067	0.011	1.1	77	110	0.014	0.0098
Selenium	1.3	0.2	0.17	0.00035	0.0018	0.0021	0.21	0.4	0.8	0.54	0.27
Silver	130	0.53	0.77	0.036	0.005	0.041	4.1	NB	NB	--	--
Thallium	0.13	0.0026	0.016	0.000035	0.000036	0.000071	0.0071	0.24	24	0.03	0.0003
Vanadium	35	0.24	0.5	0.0096	0.0024	0.012	1.2	11	NB	0.11	--
Zinc	150	55	32	0.041	0.48	0.52	52	70	120	0.75	0.44

Footnotes on following page.

Table F-26. (cont.)

Note: Hazard quotients greater than or equal to 1.0 are boxed.

--	-	hazard quotient could not be calculated because there was no TRV available
BW	-	body weight
CoPC	-	chemical of potential concern
dw	-	dry weight
LOAEL	-	lowest-observed-adverse-effect level
NB	-	no benchmark
NOAEL	-	no-observed-adverse-effect level
PCB	-	polychlorinated biphenyl
TRV	-	toxicity reference value
ww	-	wet weight

The following data were used to develop this scenario: surface sediment and blackworm data collected at station 19 in 2004 (see Appendix Tables C-3, C-5, C-29 and C-30) and terrestrial insect data collected at the site in 2004 (see Appendix Tables C-11 and C-12). Because only one terrestrial insects composite sample was collected for the whole site, the results for this sample are used to represent insect concentrations in all site models for the marsh wren.

Table F-27. Food web model results for marsh wren based on media and prey CoPC data for marsh Station 22

	Concentration			Daily Exposure				TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Insects (mg/kg ww)	Blackworms (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Pesticides/PCBs											
4,4'-DDD	0.0032	0.00055	0.0022	0.00000087	0.0000065	0.0000074	0.00074	57.9	NB	0.000013	--
4,4'-DDE	0.00048	0.00055	0.0039	0.00000013	0.0000081	0.0000082	0.00082	82.9	NB	0.0000099	--
4,4'-DDT	0.44	0.0041	0.11	0.00012	0.00013	0.00025	0.025	0.5	NB	0.051	--
Aldrin	0.0065	0.00011	0.0015	0.0000018	0.0000023	0.000004	0.0004	3.4	NB	0.00012	--
alpha-Chlordane	0.014	0.00089	0.0075	0.0000038	0.000014	0.000018	0.0018	0.282	NB	0.0064	--
alpha-Endosulfan	0.016	0.00055	0.013	0.0000044	0.000016	0.000021	0.0021	NB	NB	--	--
alpha-Hexachlorocyclohexane	0.00055	0.000085	0.0015	0.00000015	0.0000021	0.0000022	0.00022	NB	NB	--	--
beta-Endosulfan	0.0042	0.0013	0.0016	0.0000011	0.000012	0.000013	0.0013	NB	NB	--	--
beta-Hexachlorocyclohexane	0.0032	0.00011	0.00032	0.00000087	0.0000012	0.0000021	0.00021	NB	NB	--	--
delta-Hexachlorocyclohexane	0.0085	0.00018	0.00055	0.0000023	0.000002	0.0000043	0.00043	NB	NB	--	--
Dieldrin	0.048	0.0014	0.0015	0.000013	0.000013	0.000026	0.0026	0.077	NB	0.034	--
Endosulfan sulfate	0.0014	0.00055	0.00041	0.00000038	0.0000049	0.0000053	0.00053	NB	NB	--	--
Endrin	0.0032	0.0033	0.0015	0.00000087	0.000028	0.000029	0.0029	0.01	NB	0.29	--
Endrin aldehyde	0.03	0.00026	0.00026	0.0000082	0.0000024	0.000011	0.0011	NB	NB	--	--
Endrin ketone	0.011	0.00065	0.0029	0.000003	0.000008	0.000011	0.0011	NB	NB	--	--
gamma-Chlordane	0.79	0.0038	0.21	0.00022	0.00022	0.00044	0.044	0.282	NB	0.16	--
gamma-Hexachlorocyclohexane	0.014	0.00015	0.0015	0.0000038	0.0000026	0.0000064	0.00064	42.5	NB	0.000015	--
Heptachlor	0.0032	0.00086	0.0007	0.00000087	0.0000077	0.0000086	0.00086	9.2	NB	0.000093	--
Heptachlor epoxide	0.0065	0.002	0.0029	0.0000018	0.000019	0.000021	0.0021	NB	NB	--	--
Methoxychlor	0.023	0.00014	0.0015	0.0000063	0.0000025	0.0000088	0.00088	10	NB	0.000088	--
Toxaphene	1.8	0.024	0.16	0.00049	0.00034	0.00083	0.083	NB	NB	--	--
Polychlorinated biphenyls	20	0.075	11	0.0055	0.011	0.016	1.6	0.41	1.8	3.9	0.89
Inorganic Analytes											
Aluminum	7,700	90	370	2.1	1.1	3.2	320	120	NB	2.6	--
Antimony	0.79	0.022	0.016	0.00022	0.00019	0.00041	0.041	NB	NB	--	--
Arsenic	34	0.59	1.5	0.0094	0.0062	0.016	1.6	10	40	0.16	0.039
Barium	130	1.2	7.7	0.035	0.017	0.052	5.2	21	42	0.25	0.12
Beryllium	0.44	0.0028	0.012	0.00012	0.000034	0.00015	0.015	NB	NB	--	--
Cadmium	4.3	0.91	0.39	0.0012	0.0078	0.009	0.9	1.5	20	0.6	0.045
Chromium	280	0.89	4.2	0.076	0.011	0.088	8.8	0.86	4.3	10	2
Cobalt	8.5	0.093	0.28	0.0023	0.001	0.0033	0.33	NB	NB	--	--
Copper	490	42	37	0.13	0.38	0.51	51	47	62	1.1	0.82
Iron	48,000	170	570	13	1.9	15	1,500	NB	NB	--	--
Lead	320	0.74	3.2	0.087	0.009	0.096	9.6	3.9	11	2.5	0.87
Manganese	290	12	3.9	0.079	0.1	0.18	18	980	NB	0.018	--
Mercury	11	0.047	9.7	0.0029	0.0092	0.012	1.2	0.032	0.064	38	19
Nickel	44	0.72	1.1	0.012	0.0069	0.019	1.9	77	110	0.025	0.017
Selenium	0.7	0.2	0.25	0.00019	0.0019	0.0021	0.21	0.4	0.8	0.51	0.26
Silver	6.5	0.53	0.51	0.0018	0.0048	0.0066	0.66	NB	NB	--	--
Thallium	0.085	0.0026	0.024	0.000023	0.000043	0.000066	0.0066	0.24	24	0.028	0.00028
Vanadium	32	0.24	0.64	0.0088	0.0026	0.011	1.1	11	NB	0.1	--
Zinc	180	55	33	0.05	0.48	0.53	53	70	120	0.76	0.44

Footnotes on following page.

Table F-27. (cont.)

Note: Hazard quotients greater than or equal to 1.0 are boxed.

--	-	hazard quotient could not be calculated because there was no TRV available
BW	-	body weight
CoPC	-	chemical of potential concern
dw	-	dry weight
LOAEL	-	lowest-observed-adverse-effect level
NB	-	no benchmark
NOAEL	-	no-observed-adverse-effect level
PCB	-	polychlorinated biphenyl
TRV	-	toxicity reference value
ww	-	wet weight

The following data were used to develop this scenario: surface sediment and blackworm data collected at station 22 in 2004 (see Appendix Tables C-3, C-5, C-29 and C-30) and terrestrial insect data collected at the site in 2004 (see Appendix Tables C-11 and C-12). Because only one terrestrial insects composite sample was collected for the whole site, the results for this sample are used to represent insect concentrations in all site models for the marsh wren.

Table F-28. Food web model results for marsh wren based on media and prey CoPC data for marsh reference Station TERRREF1

	Concentration			Daily Exposure			BW	TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Insects (mg/kg ww)	Blackworms (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	Normalized Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Pesticides/PCBs											
4,4'-DDD	0.0027	0.0024	0.00078	0.00000074	0.00002	0.000021	0.0021	57.9	NB	0.000036	--
4,4'-DDE	0.0057	0.0011	0.0016	0.0000016	0.00001	0.000012	0.0012	82.9	NB	0.000015	--
4,4'-DDT	0.024	0.0012	0.004	0.0000066	0.000013	0.00002	0.002	0.5	NB	0.004	--
Aldrin	0.00019	0.00021	0.00028	0.000000052	0.000002	0.000002	0.0002	3.4	NB	0.00006	--
alpha-Chlordane	0.0022	0.001	0.0013	0.0000006	0.0000094	0.00001	0.001	0.282	NB	0.0035	--
alpha-Endosulfan	0.00055	0.0011	0.0023	0.00000015	0.000011	0.000011	0.0011	NB	NB	--	--
alpha-Hexachlorocyclohexane	0.00023	0.00017	0.0071	0.000000063	0.0000079	0.0000079	0.00079	NB	NB	--	--
beta-Endosulfan	0.0016	0.0011	0.00044	0.00000044	0.0000094	0.0000099	0.00099	NB	NB	--	--
beta-Hexachlorocyclohexane	0.002	0.00022	0.00027	0.00000055	0.000002	0.0000026	0.00026	NB	NB	--	--
delta-Hexachlorocyclohexane	0.00039	0.00035	0.00065	0.00000011	0.0000035	0.0000036	0.00036	NB	NB	--	--
Dieldrin	0.0012	0.0011	0.00014	0.00000033	0.0000091	0.0000095	0.00095	0.077	NB	0.012	--
Endosulfan sulfate	0.00016	0.00034	0.00034	0.000000044	0.0000031	0.0000031	0.00031	NB	NB	--	--
Endrin	0.00018	0.0011	0.0007	0.000000049	0.0000097	0.0000097	0.00097	0.01	NB	0.097	--
Endrin aldehyde	0.0007	0.0008	0.00022	0.00000019	0.0000068	0.000007	0.0007	NB	NB	--	--
Endrin ketone	0.0059	0.00095	0.00037	0.0000016	0.0000081	0.0000097	0.00097	NB	NB	--	--
gamma-Chlordane	0.0027	0.0011	0.0013	0.00000074	0.00001	0.000011	0.0011	0.282	NB	0.0039	--
gamma-Hexachlorocyclohexane	0.000075	0.00029	0.00036	0.00000002	0.0000027	0.0000027	0.00027	42.5	NB	0.0000064	--
Heptachlor	0.000075	0.00046	0.0006	0.00000002	0.0000043	0.0000043	0.00043	9.2	NB	0.000047	--
Heptachlor epoxide	0.00044	0.0011	0.0015	0.00000012	0.00001	0.000011	0.0011	NB	NB	--	--
Methoxychlor	0.003	0.0011	0.00034	0.00000082	0.0000093	0.00001	0.001	10	NB	0.0001	--
Toxaphene	0.039	0.12	0.065	0.000011	0.001	0.0011	0.11	NB	NB	--	--
Polychlorinated biphenyls	0.28	0.0048	0.17	0.000076	0.00019	0.00027	0.027	0.41	1.8	0.066	0.015
Inorganic Analytes											
Aluminum	12,000	17	440	3.2	0.54	3.7	370	120	NB	$\boxed{3.1}$	--
Antimony	0.64	0.0062	0.038	0.00017	0.000085	0.00026	0.026	NB	NB	--	--
Arsenic	39	0.065	2	0.011	0.0024	0.013	1.3	10	40	0.13	0.032
Barium	59	1.4	10	0.016	0.021	0.037	3.7	21	42	0.18	0.088
Beryllium	1.3	0.0011	0.037	0.00035	0.000043	0.0004	0.04	NB	NB	--	--
Cadmium	1.4	0.34	1	0.00038	0.0037	0.0041	0.41	1.5	20	0.27	0.02
Chromium	60	0.4	1.2	0.016	0.0044	0.021	2.1	0.86	4.3	$\boxed{2.4}$	0.48
Cobalt	16	0.027	0.73	0.0043	0.00089	0.0052	0.52	NB	NB	--	--
Copper	230	23	40	0.061	0.22	0.28	28	47	62	0.6	0.46
Iron	22,000	42	590	6.1	0.88	7	700	NB	NB	--	--
Lead	170	0.19	5.1	0.046	0.0062	0.052	5.2	3.9	11	$\boxed{1.3}$	0.47
Manganese	680	9.4	12	0.18	0.088	0.27	27	980	NB	0.028	--
Mercury	0.76	0.019	1.3	0.00021	0.0013	0.0015	0.15	0.032	0.064	$\boxed{4.8}$	$\boxed{2.4}$
Nickel	13	0.24	0.91	0.0035	0.0028	0.0063	0.63	77	110	0.0081	0.0057
Selenium	3.3	0.21	0.13	0.00089	0.0018	0.0027	0.27	0.4	0.8	0.68	0.34
Silver	3.8	0.078	0.44	0.001	0.001	0.0021	0.21	NB	NB	--	--
Thallium	0.12	0.00093	0.021	0.000033	0.000027	0.00006	0.006	0.24	24	0.025	0.00025
Vanadium	49	0.093	1.2	0.013	0.0019	0.015	1.5	11	NB	0.14	--
Zinc	260	51	47	0.072	0.46	0.53	53	70	120	0.76	0.44

Footnotes on following page.

Table F-28. (cont.)

Note: Hazard quotients greater than or equal to 1.0 are boxed.

--	-	hazard quotient could not be calculated because there was no TRV available
BW	-	body weight
CoPC	-	chemical of potential concern
dw	-	dry weight
LOAEL	-	lowest-observed-adverse-effect level
NB	-	no benchmark
NOAEL	-	no-observed-adverse-effect level
PCB	-	polychlorinated biphenyl
TRV	-	toxicity reference value
ww	-	wet weight

The following data were used to develop this scenario: surface sediment and blackworm data collected at terrestrial reference station 1 in 2004 (see Appendix Tables C-3, C-5, C-29 and C-30) and terrestrial insect data collected at the site in 2004 (see Appendix Tables C-11 and C-12). Because only one terrestrial insects composite sample was collected for the whole reference site, the results for this sample are used to represent insect concentrations in all reference models for the marsh wren.

Table F-28a. Marsh wren EPC calculation based on media and prey CoPC data for reference Station TERRREF1

Medium/Prey	Survey Station	Date	Sample ID	Field Replicate	Units	Original Data/ Intermediate Calculation	Arsenic Concentration
Sediment							
	TERRREF1	9/28/2004	SD0001	0	mg/kg		38.9
						TERRREF 1 Mean	38.9
Insect							
	REF	10/7/2004	TI0002	0	mg/kg		0.065
						Reference Mean	0.065
Blackworm							
	TERRREF1	9/28/2004	SD0001-BW	0	mg/kg		2.0
						TERRREF 1 Mean	2.0

Note: Because only one terrestrial insect composite sample was collected for the whole site, the results for this sample are used to represent insect concentrations in all site models for the marsh wren.

Blackworm (*Lumbriculus variegatus*) data were from Day 28 of the bioaccumulation test for this station.

CoPC - chemical of potential concern
EPC - exposure point concentration

Table F-29. Food web model results for marsh wren based on media and prey CoPC data for marsh reference Station TERRREF2

	Concentration			Daily Exposure				TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Insects (mg/kg ww)	Blackworms (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Pesticides/PCBs											
4,4'-DDD	0.0014	0.0024	0.00054	0.00000038	0.00002	0.000021	0.0021	57.9	NB	0.000035	--
4,4'-DDE	0.0027	0.0011	0.0014	0.00000074	0.00001	0.000011	0.0011	82.9	NB	0.000013	--
4,4'-DDT	0.012	0.0012	0.0014	0.0000033	0.000011	0.000014	0.0014	0.5	NB	0.0029	--
Aldrin	0.00021	0.00021	0.00028	0.000000057	0.000002	0.000002	0.0002	3.4	NB	0.00006	--
alpha-Chlordane	0.0016	0.001	0.00085	0.00000044	0.000009	0.0000094	0.00094	0.282	NB	0.0033	--
alpha-Endosulfan	0.00041	0.0011	0.00018	0.00000011	0.0000092	0.0000093	0.00093	NB	NB	--	--
alpha-Hexachlorocyclohexane	0.00032	0.00017	0.0021	0.000000087	0.0000033	0.0000034	0.00034	NB	NB	--	--
beta-Endosulfan	0.000049	0.0011	0.00048	0.000000013	0.0000095	0.0000095	0.00095	NB	NB	--	--
beta-Hexachlorocyclohexane	0.0038	0.00022	0.0007	0.000001	0.0000024	0.0000035	0.00035	NB	NB	--	--
delta-Hexachlorocyclohexane	0.0007	0.00035	0.00047	0.00000019	0.0000033	0.0000035	0.00035	NB	NB	--	--
Dieldrin	0.00043	0.0011	0.0015	0.00000012	0.00001	0.000011	0.0011	0.077	NB	0.014	--
Endosulfan sulfate	0.00065	0.00034	0.0014	0.00000018	0.0000041	0.0000042	0.00042	NB	NB	--	--
Endrin	0.0002	0.0011	0.0007	0.000000055	0.0000097	0.0000097	0.00097	0.01	NB	0.097	--
Endrin aldehyde	0.00037	0.0008	0.00024	0.0000001	0.0000068	0.0000069	0.00069	NB	NB	--	--
Endrin ketone	0.0019	0.00095	0.0004	0.00000052	0.0000082	0.0000087	0.00087	NB	NB	--	--
gamma-Chlordane	0.0011	0.0011	0.0014	0.0000003	0.00001	0.000011	0.0011	0.282	NB	0.0038	--
gamma-Hexachlorocyclohexane	0.00008	0.00029	0.0014	0.000000022	0.0000037	0.0000037	0.00037	42.5	NB	0.0000086	--
Heptachlor	0.00035	0.00046	0.00065	0.000000096	0.0000044	0.0000045	0.00045	9.2	NB	0.000048	--
Heptachlor epoxide	0.00027	0.0011	0.0014	0.000000074	0.00001	0.00001	0.001	NB	NB	--	--
Methoxychlor	0.0031	0.0011	0.0012	0.00000085	0.00001	0.000011	0.0011	10	NB	0.00011	--
Toxaphene	0.015	0.12	0.05	0.0000041	0.001	0.001	0.1	NB	NB	--	--
Polychlorinated biphenyls	0.098	0.0048	0.082	0.000027	0.00011	0.00014	0.014	0.41	1.8	0.034	0.0078
Inorganic Analytes											
Aluminum	3,200	17	300	0.88	0.42	1.3	130	120	NB	$\boxed{1.1}$	--
Antimony	0.66	0.0062	0.032	0.00018	0.00008	0.00026	0.026	NB	NB	--	--
Arsenic	6.7	0.065	5.7	0.0018	0.0057	0.0075	0.75	10	40	0.075	0.019
Barium	14	1.4	6.2	0.0038	0.017	0.021	2.1	21	42	0.099	0.05
Beryllium	0.2	0.0011	0.0079	0.000055	0.000016	0.000071	0.0071	NB	NB	--	--
Cadmium	0.068	0.34	0.069	0.000019	0.0029	0.0029	0.29	1.5	20	0.19	0.014
Chromium	16	0.4	0.56	0.0043	0.0038	0.008	0.8	0.86	4.3	0.94	0.19
Cobalt	0.94	0.027	0.1	0.00026	0.00031	0.00057	0.057	NB	NB	--	--
Copper	35	23	4.1	0.0094	0.19	0.2	20	47	62	0.42	0.32
Iron	7,500	42	320	2.1	0.64	2.7	270	NB	NB	--	--
Lead	82	0.19	7.9	0.022	0.0088	0.031	3.1	3.9	11	0.8	0.28
Manganese	29	9.4	1.5	0.008	0.078	0.086	8.6	980	NB	0.0088	--
Mercury	0.18	0.019	0.17	0.000049	0.00031	0.00036	0.036	0.032	0.064	$\boxed{1.1}$	0.56
Nickel	1.9	0.24	0.26	0.00051	0.0022	0.0027	0.27	77	110	0.0035	0.0025
Selenium	1.1	0.21	0.11	0.0003	0.0018	0.0021	0.21	0.4	0.8	0.53	0.27
Silver	1.3	0.078	0.066	0.00035	0.0007	0.0011	0.11	NB	NB	--	--
Thallium	0.028	0.00093	0.0041	0.0000076	0.000011	0.000019	0.0019	0.24	24	0.0079	0.000079
Vanadium	27	0.093	0.75	0.0075	0.0014	0.0089	0.89	11	NB	0.081	--
Zinc	27	51	28	0.0074	0.44	0.45	45	70	120	0.64	0.37

Footnotes on following page.

Table F-29. (cont.)

Note: Hazard quotients greater than or equal to 1.0 are boxed.

--	-	hazard quotient could not be calculated because there was no TRV available
BW	-	body weight
CoPC	-	chemical of potential concern
dw	-	dry weight
LOAEL	-	lowest-observed-adverse-effect level
NB	-	no benchmark
NOAEL	-	no-observed-adverse-effect level
PCB	-	polychlorinated biphenyl
TRV	-	toxicity reference value
ww	-	wet weight

The following data were used to develop this scenario: surface sediment and blackworm data collected at terrestrial reference station 2 in 2004 (see Appendix Tables C-3, C-5, C-29 and C-30) and terrestrial insect data collected at the site in 2004 (see Appendix Tables C-11 and C-12). Because only one terrestrial insects composite sample was collected for the whole reference site, the results for this sample are used to represent insect concentrations in all reference models for the marsh wren.

Table F-30. Food web model results for marsh wren based on media and prey CoPC data for marsh reference Station TERRREF3

	Concentration			Daily Exposure			BW	TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Insects (mg/kg ww)	Blackworms (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	Normalized Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Pesticides/PCBs											
4,4'-DDD	0.0042	0.0024	0.0009	0.0000011	0.00002	0.000022	0.0022	57.9	NB	0.000037	--
4,4'-DDE	0.0094	0.0011	0.0083	0.0000026	0.000017	0.000019	0.0019	82.9	NB	0.000023	--
4,4'-DDT	0.03	0.0012	0.0082	0.0000082	0.000017	0.000025	0.0025	0.5	NB	0.0051	--
Aldrin	0.0005	0.00021	0.0011	0.00000014	0.0000027	0.0000029	0.00029	3.4	NB	0.000084	--
alpha-Chlordane	0.01	0.001	0.00067	0.0000027	0.0000088	0.000012	0.0012	0.282	NB	0.0041	--
alpha-Endosulfan	0.0075	0.0011	0.0009	0.000002	0.0000098	0.000012	0.0012	NB	NB	--	--
alpha-Hexachlorocyclohexane	0.0005	0.00017	0.0007	0.00000014	0.000002	0.0000022	0.00022	NB	NB	--	--
beta-Endosulfan	0.0016	0.0011	0.00031	0.00000044	0.0000093	0.0000097	0.00097	NB	NB	--	--
beta-Hexachlorocyclohexane	0.0029	0.00022	0.0018	0.00000079	0.0000034	0.0000042	0.00042	NB	NB	--	--
delta-Hexachlorocyclohexane	0.0005	0.00035	0.0016	0.00000014	0.0000043	0.0000045	0.00045	NB	NB	--	--
Dieldrin	0.016	0.0011	0.000095	0.0000044	0.0000091	0.000013	0.0013	0.077	NB	0.017	--
Endosulfan sulfate	0.00065	0.00034	0.00099	0.00000018	0.0000037	0.0000039	0.00039	NB	NB	--	--
Endrin	0.00024	0.0011	0.00032	0.000000066	0.0000093	0.0000094	0.00094	0.01	NB	0.094	--
Endrin aldehyde	0.00065	0.0008	0.0009	0.00000018	0.0000074	0.0000076	0.00076	NB	NB	--	--
Endrin ketone	0.0012	0.00095	0.0009	0.00000033	0.0000086	0.0000089	0.00089	NB	NB	--	--
gamma-Chlordane	0.014	0.0011	0.0014	0.0000038	0.00001	0.000014	0.0014	0.282	NB	0.005	--
gamma-Hexachlorocyclohexane	0.0001	0.00029	0.0009	0.000000027	0.0000032	0.0000032	0.00032	42.5	NB	0.0000076	--
Heptachlor	0.0005	0.00046	0.0013	0.00000014	0.000005	0.0000051	0.00051	9.2	NB	0.000055	--
Heptachlor epoxide	0.0014	0.0011	0.0019	0.00000038	0.000011	0.000011	0.0011	NB	NB	--	--
Methoxychlor	0.0007	0.0011	0.0035	0.00000019	0.000012	0.000012	0.0012	10	NB	0.00012	--
Toxaphene	0.07	0.12	0.055	0.000019	0.001	0.0011	0.11	NB	NB	--	--
Polychlorinated biphenyls	0.77	0.0048	0.26	0.00021	0.00028	0.00049	0.049	0.41	1.8	0.12	0.027
Inorganic Analytes											
Aluminum	14,000	17	540	3.8	0.64	4.5	450	120	NB	3.7	--
Antimony	2.3	0.0062	0.035	0.00062	0.000083	0.0007	0.07	NB	NB	--	--
Arsenic	50	0.065	2.6	0.014	0.0029	0.017	1.7	10	40	0.17	0.041
Barium	57	1.4	7.1	0.016	0.018	0.034	3.4	21	42	0.16	0.08
Beryllium	1	0.0011	0.025	0.00027	0.000032	0.0003	0.03	NB	NB	--	--
Cadmium	2.7	0.34	0.52	0.00074	0.0033	0.004	0.4	1.5	20	0.27	0.02
Chromium	90	0.4	1.7	0.025	0.0048	0.029	2.9	0.86	4.3	3.4	0.69
Cobalt	12	0.027	0.41	0.0032	0.00059	0.0038	0.38	NB	NB	--	--
Copper	310	23	29	0.086	0.21	0.3	30	47	62	0.63	0.48
Iron	32,000	42	650	8.8	0.94	9.8	980	NB	NB	--	--
Lead	180	0.19	3.3	0.049	0.0046	0.054	5.4	3.9	11	1.4	0.49
Manganese	370	9.4	6.4	0.1	0.083	0.19	19	980	NB	0.019	--
Mercury	1.4	0.019	0.97	0.00038	0.001	0.0014	0.14	0.032	0.064	4.4	2.2
Nickel	34	0.24	1	0.0092	0.0029	0.012	1.2	77	110	0.016	0.011
Selenium	5.2	0.21	0.16	0.0014	0.0019	0.0033	0.33	0.4	0.8	0.82	0.41
Silver	4.6	0.078	0.16	0.0013	0.00079	0.002	0.2	NB	NB	--	--
Thallium	0.19	0.00093	0.029	0.000052	0.000034	0.000086	0.0086	0.24	24	0.036	0.00036
Vanadium	63	0.093	1.4	0.017	0.002	0.019	1.9	11	NB	0.18	--
Zinc	370	51	39	0.1	0.45	0.55	55	70	120	0.79	0.46

Footnotes on following page.

Table F-30. (cont.)

Note: Hazard quotients greater than or equal to 1.0 are boxed.

--	-	hazard quotient could not be calculated because there was no TRV available
BW	-	body weight
CoPC	-	chemical of potential concern
dw	-	dry weight
LOAEL	-	lowest-observed-adverse-effect level
NB	-	no benchmark
NOAEL	-	no-observed-adverse-effect level
PCB	-	polychlorinated biphenyl
TRV	-	toxicity reference value
ww	-	wet weight

The following data were used to develop this scenario: surface sediment and blackworm data collected at terrestrial reference station 3 in 2004 (see Appendix Tables C-3, C-5, C-29 and C-30) and terrestrial insect data collected at the site in 2004 (see Appendix Tables C-11 and C-12). Because only one terrestrial insects composite sample was collected for the whole reference site, the results for this sample are used to represent insect concentrations in all reference models for the marsh wren.

Table F-31. Food web model results for osprey based on media and prey CoPC data for Raritan River reach at OU-3

Analyte	Concentration		Daily Exposure		Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	Area Use Adjusted Exposure (mg/kg-day)	TRV		Hazard Quotient	
	Sediment (mg/kg dw)	Fish (mg/kg ww)	Sediment (mg/day)	Food (mg/day)				NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Semivolatile Organic Compounds											
2,4,5-Trichlorophenol	0.011	0.009	0.00002	0.0033	0.0033	0.0019	0.0000059	NB	NB	--	--
2,4,6-Trichlorophenol	0.019	0.047	0.000034	0.017	0.017	0.0099	0.000031	NB	NB	--	--
2,4-Dichlorophenol	0.019	0.065	0.000034	0.024	0.024	0.014	0.000042	NB	NB	--	--
2,4-Dimethylphenol	0.06	0.07	0.00011	0.025	0.025	0.015	0.000046	NB	NB	--	--
2,4-Dinitrophenol	0.37	0.13	0.00067	0.047	0.048	0.028	0.000086	NB	NB	--	--
2,4-Dinitrotoluene	0.017	0.07	0.000031	0.025	0.025	0.015	0.000046	NB	NB	--	--
2,6-Dinitrotoluene	0.029	0.051	0.000053	0.018	0.019	0.011	0.000033	NB	NB	--	--
2-Chloronaphthalene	0.037	0.032	0.000067	0.012	0.012	0.0068	0.000021	NB	NB	--	--
2-Chlorophenol	0.018	0.06	0.000033	0.022	0.022	0.013	0.000039	NB	NB	--	--
2-Methyl-4,6-dinitrophenol	0.018	0.08	0.000033	0.029	0.029	0.017	0.000052	0.454	NB	0.00011	--
2-Methylnaphthalene	0.015	0.0021	0.000027	0.00076	0.00079	0.00046	0.0000014	NB	NB	--	--
2-Methylphenol	0.035	0.29	0.000063	0.11	0.11	0.061	0.00019	NB	NB	--	--
2-Nitroaniline	0.028	0.14	0.000051	0.051	0.051	0.029	0.000091	NB	NB	--	--
2-Nitrophenol	0.027	0.08	0.000049	0.029	0.029	0.017	0.000052	NB	NB	--	--
3,3'-Dichlorobenzidine	0.038	4.2	0.000069	1.5	1.5	0.88	0.0027	NB	NB	--	--
3-Nitroaniline	0.027	0.048	0.000049	0.017	0.017	0.01	0.000031	NB	NB	--	--
4-Bromophenyl ether	0.015	0.03	0.000027	0.011	0.011	0.0063	0.00002	NB	NB	--	--
4-Chloro-3-methylphenol	0.022	0.39	0.00004	0.14	0.14	0.082	0.00025	NB	NB	--	--
4-Chloroaniline	0.0058	0.032	0.000011	0.012	0.012	0.0067	0.000021	NB	NB	--	--
4-Chlorophenyl-phenyl ether	0.021	0.024	0.000038	0.0087	0.0087	0.0051	0.000016	NB	NB	--	--
4-Methylphenol	0.015	0.03	0.000027	0.011	0.011	0.0063	0.00002	NB	NB	--	--
4-Nitroaniline	0.035	0.14	0.000063	0.051	0.051	0.029	0.000091	NB	NB	--	--
4-Nitrophenol	0.31	0.04	0.00056	0.014	0.015	0.0087	0.000027	NB	NB	--	--
Acenaphthene	0.0043	0.0014	0.0000078	0.00051	0.00051	0.0003	0.00000092	NB	NB	--	--
Acenaphthylene	0.022	0.0004	0.00004	0.00014	0.00018	0.00011	0.00000033	NB	NB	--	--
Acetophenone	0.024	0.016	0.000043	0.0058	0.0058	0.0034	0.00001	NB	NB	--	--
Anthracene	0.033	0.001	0.00006	0.00036	0.00042	0.00024	0.00000076	NB	NB	--	--
Atrazine	0.023	0.18	0.000042	0.065	0.065	0.038	0.00012	NB	NB	--	--
Benz[a]anthracene	0.08	0.001	0.00014	0.00036	0.00051	0.00029	0.00000091	NB	NB	--	--
Benzaldehyde	0.05	3.9	0.000091	1.4	1.4	0.82	0.0025	NB	NB	--	--
Benzo[a]pyrene	0.09	0.001	0.00016	0.00036	0.00053	0.0003	0.00000094	NB	NB	--	--
Benzo[b]fluoranthene	0.15	0.0009	0.00027	0.00033	0.0006	0.00035	0.0000011	NB	NB	--	--
Benzo[ghi]perylene	0.08	0.0006	0.00014	0.00022	0.00036	0.00021	0.00000065	NB	NB	--	--
Benzo[k]fluoranthene	0.05	0.001	0.000091	0.00036	0.00045	0.00026	0.00000081	NB	NB	--	--
Biphenyl	0.049	0.025	0.000089	0.0091	0.0091	0.0053	0.000016	NB	NB	--	--
bis[2-chloroethoxy]methane	0.014	0.027	0.000025	0.0098	0.0098	0.0057	0.000018	NB	NB	--	--
bis[2-chloroethyl]ether	0.025	0.047	0.000045	0.017	0.017	0.0099	0.000031	NB	NB	--	--
Bis[2-chloroisopropyl]ether	0.013	0.06	0.000024	0.022	0.022	0.013	0.000039	NB	NB	--	--
bis[2-Ethylhexyl]phthalate	4	0.1	0.0072	0.036	0.043	0.025	0.000078	1.2	NB	0.000065	--
Butylbenzyl phthalate	0.023	0.38	0.000042	0.14	0.14	0.08	0.00025	NB	NB	--	--

Table F-31. (cont.)

Analyte	Concentration: Sediment (mg/kg dw)	Concentration: Fish (mg/kg ww)	Daily Exposure: Sediment (mg/day)	Daily Exposure: Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	Area Use Adjusted Exposure (mg/kg-day)	TRV: NOAEL (mg/kg-day)	TRV: LOAEL (mg/kg-day)	Hazard Quotient: NOAEL Hazard Quotient	Hazard Quotient: LOAEL Hazard Quotient
Caprolactam	0.13	0.07	0.00024	0.025	0.026	0.015	0.000046	NB	NB	--	--
Carbazole	0.007	0.18	0.000013	0.065	0.065	0.038	0.00012	NB	NB	--	--
Chrysene	0.12	0.001	0.00022	0.00036	0.00058	0.00034	0.000001	NB	NB	--	--
Dibenz[a,h]anthracene	0.018	0.00021	0.000033	0.000076	0.00011	0.000063	0.00000019	NB	NB	--	--
Dibenzofuran	0.006	0.0011	0.000011	0.0004	0.00041	0.00024	0.00000073	NB	NB	--	--
Diethyl phthalate	0.036	0.13	0.000065	0.047	0.047	0.027	0.000085	NB	NB	--	--
Dimethyl phthalate	0.019	0.12	0.000034	0.043	0.044	0.025	0.000078	NB	NB	--	--
Di-n-butyl phthalate	0.016	1.4	0.000029	0.51	0.51	0.29	0.00091	NB	NB	--	--
Di-n-octyl phthalate	0.078	0.07	0.00014	0.025	0.025	0.015	0.000046	NB	NB	--	--
Fluoranthene	0.19	0.004	0.00034	0.0014	0.0018	0.001	0.0000032	NB	NB	--	--
Fluorene	0.007	0.0011	0.000013	0.0004	0.00041	0.00024	0.00000074	NB	NB	--	--
Hexachlorobenzene	0.022	0.032	0.00004	0.012	0.012	0.0067	0.000021	NB	NB	--	--
Hexachlorobutadiene	0.015	0.046	0.000027	0.017	0.017	0.0097	0.00003	NB	NB	--	--
Hexachlorocyclopentadiene	0.16	27	0.00029	9.8	9.8	5.7	0.018	NB	NB	--	--
Hexachloroethane	0.023	0.046	0.000042	0.017	0.017	0.0097	0.00003	NB	NB	--	--
Indeno[1,2,3-cd]pyrene	0.07	0.0007	0.00013	0.00025	0.00038	0.00022	0.00000068	NB	NB	--	--
Isophorone	0.017	0.025	0.000031	0.0091	0.0091	0.0053	0.000016	NB	NB	--	--
Naphthalene	0.024	0.0028	0.000043	0.001	0.0011	0.00061	0.0000019	NB	NB	--	--
Nitrobenzene	0.021	0.055	0.000038	0.02	0.02	0.012	0.000036	NB	NB	--	--
N-nitroso-di-n-propylamine	0.033	0.044	0.00006	0.016	0.016	0.0093	0.000029	NB	NB	--	--
N-nitrosodiphenylamine	0.044	0.055	0.00008	0.02	0.02	0.012	0.000036	NB	NB	--	--
Pentachlorophenol	0.09	0.17	0.00016	0.062	0.062	0.036	0.00011	NB	NB	--	--
Phenanthrene	0.05	0.002	0.000091	0.00072	0.00082	0.00047	0.0000015	NB	NB	--	--
Phenol	0.04	0.15	0.000072	0.054	0.054	0.032	0.000098	NB	NB	--	--
Pyrene	0.22	0.003	0.0004	0.0011	0.0015	0.00086	0.0000027	NB	NB	--	--
Total PAHs	1.3	0.02	0.0024	0.0072	0.0096	0.0056	0.000017	0.14	1.4	0.00012	0.000012
Pesticides/PCBs											
4,4'-DDD	0.012	0.025	0.000022	0.0091	0.0091	0.0053	0.000016	57.9	NB	0.00000028	--
4,4'-DDE	0.012	0.029	0.000022	0.011	0.011	0.0061	0.000019	82.9	NB	0.00000023	--
4,4'-DDT	0.02	0.01	0.000036	0.0036	0.0037	0.0021	0.0000066	0.5	NB	0.000013	--
Aldrin	0.0025	0.0012	0.0000045	0.00043	0.00044	0.00025	0.00000079	3.4	NB	0.00000023	--
alpha-Chlordane	0.0019	0.0029	0.0000034	0.0011	0.0011	0.00061	0.0000019	0.282	NB	0.0000067	--
alpha-Endosulfan	0.003	0.0033	0.0000054	0.0012	0.0012	0.0007	0.0000022	NB	NB	--	--
alpha-Hexachlorocyclohexane	0.00069	0.00013	0.0000012	0.000047	0.000048	0.000028	0.000000087	NB	NB	--	--
beta-Endosulfan	0.012	0.0014	0.000022	0.00051	0.00053	0.00031	0.00000095	NB	NB	--	--
beta-Hexachlorocyclohexane	0.0009	0.0009	0.0000016	0.00033	0.00033	0.00019	0.00000059	NB	NB	--	--
delta-Hexachlorocyclohexane	0.00034	0.0008	0.00000062	0.00029	0.00029	0.00017	0.00000052	NB	NB	--	--
Dieldrin	0.00054	0.0027	0.00000098	0.00098	0.00098	0.00057	0.0000018	0.077	NB	0.000023	--
Endosulfan sulfate	0.0016	0.0012	0.0000029	0.00043	0.00044	0.00025	0.00000079	NB	NB	--	--
Endrin	0.0074	0.0013	0.000013	0.00047	0.00048	0.00028	0.00000087	0.01	NB	0.000087	--
Endrin aldehyde	0.0022	0.0021	0.000004	0.00076	0.00076	0.00044	0.0000014	NB	NB	--	--

Table F-31. (cont.)

Analyte	Concentration: Sediment (mg/kg dw)	Concentration: Fish (mg/kg ww)	Daily Exposure: Sediment (mg/day)	Daily Exposure: Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	Area Use Adjusted Exposure (mg/kg-day)	TRV: NOAEL (mg/kg-day)	TRV: LOAEL (mg/kg-day)	Hazard Quotient: NOAEL Hazard Quotient	Hazard Quotient: LOAEL Hazard Quotient
Endrin ketone	0.00055	0.001	0.000001	0.00036	0.00036	0.00021	0.00000065	NB	NB	--	--
gamma-Chlordane	0.01	0.007	0.000018	0.0025	0.0026	0.0015	0.0000046	0.282	NB	0.000016	--
gamma-Hexachlorocyclohexane	0.0022	0.0004	0.000004	0.00014	0.00015	0.000086	0.00000027	42.5	NB	6.3E-09	--
Heptachlor	0.0014	0.0008	0.0000025	0.00029	0.00029	0.00017	0.00000052	9.2	NB	0.000000057	--
Heptachlor epoxide	0.00068	0.0048	0.0000012	0.0017	0.0017	0.001	0.0000031	NB	NB	--	--
Methoxychlor	0.00085	0.0035	0.0000015	0.0013	0.0013	0.00074	0.0000023	10	NB	0.00000023	--
Toxaphene	0.26	0.1	0.00047	0.036	0.037	0.021	0.000066	NB	NB	--	--
Polychlorinated biphenyls	1.4	0.59	0.0025	0.21	0.22	0.13	0.00039	0.41	1.8	0.00095	0.00022
Dioxins/Furans											
2,3,7,8-Tetrachlorodibenzo-p-dioxin	0.00000049	0.00000048	8.9E-10	0.00000017	0.00000017	0.0000001	3.1E-10	0.000014	NB	0.000022	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	0.00000032	0.00000013	5.8E-10	4.7E-08	0.000000048	2.8E-08	8.6E-11	0.000014	NB	0.0000061	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	0.00000044	0.00000003	8E-10	1.1E-08	0.000000012	6.8E-09	2.1E-11	0.000014	NB	0.0000015	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.0000023	0.00000017	4.2E-09	6.2E-08	0.000000066	3.8E-08	1.2E-10	0.000014	NB	0.0000084	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.0000018	0.00000006	3.3E-09	2.2E-08	0.000000025	1.4E-08	4.5E-11	0.000014	NB	0.0000032	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxi	0.000033	0.0000012	0.00000006	0.00000043	0.00000049	0.00000029	8.9E-10	0.000014	NB	0.000063	--
Octachlorodibenzo-p-dioxin	0.0009	0.000029	0.0000016	0.000011	0.000012	0.000007	0.000000022	0.000014	NB	0.0016	--
2,3,7,8-Tetrachlorodibenzofuran	0.0000019	0.00000051	0.0000000034	0.00000018	0.00000019	0.00000011	3.4E-10	0.000001	NB	0.00034	--
1,2,3,7,8-Pentachlorodibenzofuran	0.00000081	0.000000063	0.0000000015	2.3E-08	0.000000024	1.4E-08	4.4E-11	0.000014	NB	0.0000031	--
2,3,4,7,8-Pentachlorodibenzofuran	0.000001	0.0000003	0.0000000018	0.00000011	0.00000011	6.4E-08	2E-10	0.000014	NB	0.000014	--
1,2,3,4,7,8-Hexachlorodibenzofuran	0.0000026	0.00000011	0.0000000047	0.00000004	0.000000045	2.6E-08	8E-11	0.000014	NB	0.0000057	--
1,2,3,6,7,8-Hexachlorodibenzofuran	0.000001	0.000000056	0.0000000018	0.00000002	0.000000022	1.3E-08	4E-11	0.000014	NB	0.0000028	--
2,3,4,6,7,8-Hexachlorodibenzofuran	0.0000011	0.000000008	0.000000002	2.9E-09	4.9E-09	2.8E-09	8.8E-12	0.000014	NB	0.00000063	--
1,2,3,7,8,9-Hexachlorodibenzofuran	0.00000015	0.000000007	2.7E-10	2.5E-09	2.8E-09	1.6E-09	5E-12	0.000014	NB	0.00000036	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.000011	0.00000043	0.00000002	0.00000016	0.00000018	0.0000001	3.2E-10	0.000014	NB	0.000023	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.0000008	0.000000011	1.4E-09	4E-09	5.4E-09	3.2E-09	9.7E-12	0.000014	NB	0.0000007	--
Octachlorodibenzofuran	0.000032	0.00000031	0.000000058	0.00000011	0.00000017	9.9E-08	3.1E-10	0.000014		0.000022	--
Dioxin/furan TCDD toxicity equivalent	0.0000048	0.0000015	8.7E-09	0.00000054	0.00000055	0.00000032	9.9E-10	0.000014	0.00014	0.000071	0.0000071
Inorganic Analytes											
Aluminum	13,000	63	23	23	46	26	0.082	120	NB	0.00068	--
Antimony	12	0.013	0.021	0.0047	0.026	0.015	0.000047	NB	NB	--	--
Arsenic	97	0.9	0.18	0.33	0.5	0.29	0.0009	10	40	0.00009	0.000023
Barium	64	1.2	0.12	0.43	0.55	0.32	0.00099	21	42	0.000047	0.000024
Beryllium	0.8	0.005	0.0014	0.0018	0.0033	0.0019	0.0000058	NB	NB	--	--
Cadmium	0.8	0.009	0.0014	0.0033	0.0047	0.0027	0.0000084	1.5	20	0.0000056	0.00000042
Chromium	130	0.19	0.24	0.069	0.31	0.18	0.00055	0.86	4.3	0.00064	0.00013
Cobalt	7	0.09	0.013	0.033	0.045	0.026	0.000081	NB	NB	--	--
Copper	230	3.8	0.41	1.4	1.8	1	0.0032	47	62	0.000068	0.000052
Iron	42,000	110	75	39	110	66	0.21	NB	NB	--	--
Lead	110	0.2	0.2	0.072	0.27	0.16	0.00049	3.9	11	0.00012	0.000044
Manganese	220	6.7	0.4	2.4	2.8	1.6	0.0051	980	NB	0.0000052	--
Mercury	1.4	0.025	0.0025	0.0091	0.012	0.0067	0.000021	0.032	0.064	0.00065	0.00032

Table F-31. (cont.)

Analyte	Concentration: Sediment (mg/kg dw)	Concentration: Fish (mg/kg ww)	Daily Exposure: Sediment (mg/day)	Daily Exposure: Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	Area Use Adjusted Exposure (mg/kg-day)	TRV: NOAEL (mg/kg-day)	TRV: LOAEL (mg/kg-day)	Hazard Quotient: NOAEL Hazard Quotient	Hazard Quotient: LOAEL Hazard Quotient
Nickel	6.8	0.54	0.012	0.2	0.21	0.12	0.00037	77	110	0.0000048	0.0000034
Selenium	3	0.49	0.0054	0.18	0.18	0.11	0.00033	0.4	0.8	0.00082	0.00041
Silver	5.2	0.07	0.0094	0.025	0.035	0.02	0.000062	NB	NB	--	--
Thallium	0.19	0.0008	0.00034	0.00029	0.00063	0.00037	0.0000011	0.24	24	0.0000047	4.7E-08
Vanadium	92	0.5	0.17	0.18	0.35	0.2	0.00062	11	NB	0.000057	--
Zinc	210	38	0.39	14	14	8.3	0.026	70	120	0.00037	0.00021

Note: -- - hazard quotient could not be calculated because there was no TRV available
BW - body weight
CoPC - chemical of potential concern
dw - dry weight
LOAEL - lowest-observed-adverse-effect level
NB - no benchmark
NOAEL - no-observed-adverse-effect level
OU-3 - Operable Unit 3
PAH - polycyclic aromatic hydrocarbon
PCB - polychlorinated biphenyl
TRV - toxicity reference value
ww - wet weight

The following data were used to develop this scenario: surface sediment and fish data collected at river stations in 2004 (see Appendix Tables C-2, C-3, C-4, C-5, C-23, C-24, C-25 and C-26).

Exposure point concentrations are means of detected values. However, if a chemical was undetected in all samples, its concentration was estimated as one-half of the maximum detection limit.

Table F-31a. Osprey EPC calculation based on media and prey CoPC data for Raritan River reach at OU-3

Medium/Prey	Survey Station	Date	Sample ID	Field Replicate	Units	Original Data/ Intermediate Calculation	Arsenic Concentration
Sediment							
	1	10/5/2004	SD0025	0	mg/kg		17
	2	10/5/2004	SD0024	0	mg/kg		216
	3	10/5/2004	SD0023	0	mg/kg		311
	4	10/5/2004	SD0022	0	mg/kg		266
	5	10/1/2004	SD0008	0	mg/kg		33.1
	6	10/1/2004	SD0009	0	mg/kg		71.7
	7R	10/6/2004	SD0034	0	mg/kg		9.13
	8	10/1/2004	SD0010D	1	mg/kg	27.4	
	8	10/1/2004	SD0010D	2	mg/kg	27.5	
					Field Rep. Average		27.5
	9	10/1/2004	SD0012	0	mg/kg		11
	10	10/6/2004	SD0033	0	mg/kg		10.8
					OU-3 Mean		107
Fish							
	1	10/7/2004	FI0079-D	1	mg/kg	0.63	
	1	10/7/2004	FI0079-D	2	mg/kg	0.53	
	1	10/7/2004	FI0079-D	3	mg/kg	0.62	
					Field Rep. Average		0.59
	2	10/7/2004	FI0082-D	1	mg/kg	0.72	
	2	10/7/2004	FI0082-D	2	mg/kg	0.63	
	2	10/7/2004	FI0082-D	3	mg/kg	0.71	
					Field Rep. Average		0.69
	3	10/7/2004	FI0085-D	1	mg/kg	0.58	
	3	10/7/2004	FI0085-D	2	mg/kg	1.2	
	3	10/7/2004	FI0085-D	3	mg/kg	1	
					Field Rep. Average		0.93
	4	10/7/2004	FI0088-D	1	mg/kg	1.1	
	4	10/7/2004	FI0088-D	2	mg/kg	1.4	
	4	10/7/2004	FI0088-D	3	mg/kg	1.1	
					Field Rep. Average		1.2
	5	10/7/2004	FI0091-D	1	mg/kg	1.1	
	5	10/7/2004	FI0091-D	2	mg/kg	1.2	
	5	10/7/2004	FI0091-D	3	mg/kg	1.1	
					Field Rep. Average		1.1
	6	10/7/2004	FI0094-D	1	mg/kg	1.1	
	6	10/7/2004	FI0094-D	2	mg/kg	1.1	
	6	10/7/2004	FI0094-D	3	mg/kg	1.1	
					Field Rep. Average		1.1
	7R	10/7/2004	FI0097-D	1	mg/kg	0.59	
	7R	10/7/2004	FI0097-D	2	mg/kg	0.65	
	7R	10/7/2004	FI0097-D	3	mg/kg	0.64	
					Field Rep. Average		0.63
	8	10/7/2004	FI0100-D	1	mg/kg	0.81	
	8	10/7/2004	FI0100-D	2	mg/kg	0.9	
	8	10/7/2004	FI0100-D	3	mg/kg	1	
					Field Rep. Average		0.90

Table F-31a. (cont.)

Medium/Prey	Survey Station	Date	Sample ID	Field Replicate	Units	Original Data/ Intermediate Calculation	Arsenic Concentration
	9	10/7/2004	FI0103-D	1	mg/kg	0.6	
	9	10/7/2004	FI0103-D	2	mg/kg	0.8	
	9	10/7/2004	FI0103-D	3	mg/kg	0.58	
						Field Rep. Average	0.66
	10	10/7/2004	FI0106-D	1	mg/kg	0.56	
	10	10/7/2004	FI0106-D	2	mg/kg	0.77	
	10	10/7/2004	FI0106-D	3	mg/kg	0.63	
						Field Rep. Average	0.65
						OU-3 Mean	0.87
						OU-3 mean - 1 significant digit	0.9

Note: Mean detected values used for 2004 river surface sediment and fish.

Estuarine fish and crab data were from whole body composite samples.

CoPC - chemical of potential concern
EPC - exposure point concentration

Table F-32. Food web model results for osprey based on media and prey CoPC data for reference reach of Raritan River

	Concentration		Daily Exposure				TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Fish (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Semivolatiles										
2,4,5-Trichlorophenol	0.007	0.06	0.000013	0.022	0.022	0.013	NB	NB	--	--
2,4,6-Trichlorophenol	0.004	0.047	0.0000072	0.017	0.017	0.0099	NB	NB	--	--
2,4-Dichlorophenol	0.004	0.065	0.0000072	0.024	0.024	0.014	NB	NB	--	--
2,4-Dimethylphenol	0.013	0.07	0.000024	0.025	0.025	0.015	NB	NB	--	--
2,4-Dinitrophenol	0.08	0.13	0.00014	0.047	0.047	0.027	NB	NB	--	--
2,4-Dinitrotoluene	0.0065	0.046	0.000012	0.017	0.017	0.0097	NB	NB	--	--
2,6-Dinitrotoluene	0.0065	0.038	0.000012	0.014	0.014	0.008	NB	NB	--	--
2-Chloronaphthalene	0.008	0.032	0.000014	0.012	0.012	0.0067	NB	NB	--	--
2-Chlorophenol	0.0038	0.06	0.0000069	0.022	0.022	0.013	NB	NB	--	--
2-Methyl-4,6-dinitrophenol	0.0038	0.08	0.0000069	0.029	0.029	0.017	0.454	NB	0.037	--
2-Methylnaphthalene	0.012	0.0022	0.000022	0.0008	0.00082	0.00047	NB	NB	--	--
2-Methylphenol	0.0075	0.29	0.000014	0.11	0.11	0.061	NB	NB	--	--
2-Nitroaniline	0.006	0.14	0.000011	0.051	0.051	0.029	NB	NB	--	--
2-Nitrophenol	0.006	0.08	0.000011	0.029	0.029	0.017	NB	NB	--	--
3,3'-Dichlorobenzidine	0.0085	4.2	0.000015	1.5	1.5	0.88	NB	NB	--	--
3-Nitroaniline	0.006	0.048	0.000011	0.017	0.017	0.01	NB	NB	--	--
4-Bromophenyl ether	0.0031	0.03	0.0000056	0.011	0.011	0.0063	NB	NB	--	--
4-Chloro-3-methylphenol	0.0047	0.39	0.0000085	0.14	0.14	0.082	NB	NB	--	--
4-Chloroaniline	0.0047	0.032	0.0000085	0.012	0.012	0.0067	NB	NB	--	--
4-Chlorophenyl-phenyl ether	0.0044	0.024	0.000008	0.0087	0.0087	0.005	NB	NB	--	--
4-Methylphenol	0.019	0.08	0.000034	0.029	0.029	0.017	NB	NB	--	--
4-Nitroaniline	0.0075	0.14	0.000014	0.051	0.051	0.029	NB	NB	--	--
4-Nitrophenol	0.07	0.04	0.00013	0.014	0.015	0.0085	NB	NB	--	--
Acenaphthene	0.005	0.0012	0.0000091	0.00043	0.00044	0.00026	NB	NB	--	--
Acenaphthylene	0.019	0.00048	0.000034	0.00017	0.00021	0.00012	NB	NB	--	--
Acetophenone	0.027	0.11	0.000049	0.04	0.04	0.023	NB	NB	--	--
Anthracene	0.031	0.00072	0.000056	0.00026	0.00032	0.00018	NB	NB	--	--
Atrazine	0.0049	0.03	0.0000089	0.011	0.011	0.0063	NB	NB	--	--
Benz[a]anthracene	0.06	0.0007	0.00011	0.00025	0.00036	0.00021	NB	NB	--	--
Benzaldehyde	0.028	3.9	0.000051	1.4	1.4	0.82	NB	NB	--	--
Benzo[a]pyrene	0.07	0.000041	0.00013	0.000015	0.00014	0.000082	NB	NB	--	--
Benzo[b]fluoranthene	0.1	0.0006	0.00018	0.00022	0.0004	0.00023	NB	NB	--	--
Benzo[ghi]perylene	0.06	0.00052	0.00011	0.00019	0.0003	0.00017	NB	NB	--	--
Benzo[k]fluoranthene	0.033	0.0006	0.00006	0.00022	0.00028	0.00016	NB	NB	--	--
Biphenyl	0.011	0.026	0.00002	0.0094	0.0094	0.0055	NB	NB	--	--
bis[2-chloroethoxy]methane	0.0029	0.027	0.0000053	0.0098	0.0098	0.0057	NB	NB	--	--
bis[2-chloroethyl]ether	0.0055	0.047	0.00001	0.017	0.017	0.0099	NB	NB	--	--
Bis[2-chloroisopropyl]ether	0.0027	0.06	0.0000049	0.022	0.022	0.013	NB	NB	--	--
bis[2-Ethylhexyl]phthalate	0.6	0.8	0.0011	0.29	0.29	0.17	1.2	NB	0.14	--
Butylbenzyl phthalate	0.018	0.33	0.000033	0.12	0.12	0.069	NB	NB	--	--

Table F-32. (cont.)

Analyte	Concentration: Sediment (mg/kg dw)	Concentration: Fish (mg/kg ww)	Daily Exposure: Sediment (mg/day)	Daily Exposure: Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV: NOAEL (mg/kg-day)	TRV: LOAEL (mg/kg-day)	Hazard Quotient: NOAEL Hazard Quotient	Hazard Quotient: LOAEL Hazard Quotient
Caprolactam	0.027	0.07	0.000049	0.025	0.025	0.015	NB	NB	--	--
Carbazole	0.008	0.18	0.000014	0.065	0.065	0.038	NB	NB	--	--
Chrysene	0.05	0.0009	0.000091	0.00033	0.00042	0.00024	NB	NB	--	--
Dibenz[a,h]anthracene	0.014	0.0001	0.000025	0.000036	0.000062	0.000036	NB	NB	--	--
Dibenzofuran	0.009	0.001	0.000016	0.00036	0.00038	0.00022	NB	NB	--	--
Diethyl phthalate	0.008	0.055	0.000014	0.02	0.02	0.012	NB	NB	--	--
Dimethyl phthalate	0.004	0.047	0.0000072	0.017	0.017	0.0099	NB	NB	--	--
Di-n-butyl phthalate	0.012	1.2	0.000022	0.43	0.43	0.25	NB	NB	--	--
Di-n-octyl phthalate	0.0027	0.07	0.0000049	0.025	0.025	0.015	NB	NB	--	--
Fluoranthene	0.12	0.0023	0.00022	0.00083	0.0011	0.00061	NB	NB	--	--
Fluorene	0.01	0.001	0.000018	0.00036	0.00038	0.00022	NB	NB	--	--
Hexachlorobenzene	0.0047	0.032	0.0000085	0.012	0.012	0.0067	NB	NB	--	--
Hexachlorobutadiene	0.0031	0.046	0.0000056	0.017	0.017	0.0097	NB	NB	--	--
Hexachlorocyclopentadiene	0.033	27	0.00006	9.8	9.8	5.7	NB	NB	--	--
Hexachloroethane	0.0049	0.046	0.0000089	0.017	0.017	0.0097	NB	NB	--	--
Indeno[1,2,3-cd]pyrene	0.05	0.00053	0.000091	0.00019	0.00028	0.00016	NB	NB	--	--
Isophorone	0.0036	0.031	0.0000065	0.011	0.011	0.0065	NB	NB	--	--
Naphthalene	0.024	0.002	0.000043	0.00072	0.00077	0.00045	NB	NB	--	--
Nitrobenzene	0.0044	0.055	0.000008	0.02	0.02	0.012	NB	NB	--	--
N-nitroso-di-n-propylamine	0.0075	0.044	0.000014	0.016	0.016	0.0092	NB	NB	--	--
N-nitrosodiphenylamine	0.019	0.055	0.000034	0.02	0.02	0.012	NB	NB	--	--
Pentachlorophenol	0.019	0.17	0.000034	0.062	0.062	0.036	NB	NB	--	--
Phenanthrene	0.04	0.0016	0.000072	0.00058	0.00065	0.00038	NB	NB	--	--
Phenol	0.024	0.21	0.000043	0.076	0.076	0.044	NB	NB	--	--
Pyrene	0.13	0.0019	0.00024	0.00069	0.00092	0.00054	NB	NB	--	--
Total PAHs	1.1	0.017	0.002	0.0062	0.0082	0.0047	0.14	1.4	0.034	0.0034
Pesticides/PCBs										
4,4'-DDD	0.013	0.025	0.000024	0.0091	0.0091	0.0053	57.9	NB	0.000091	--
4,4'-DDE	0.03	0.027	0.000054	0.0098	0.0098	0.0057	82.9	NB	0.000069	--
4,4'-DDT	0.019	0.009	0.000034	0.0033	0.0033	0.0019	0.5	NB	0.0038	--
Aldrin	0.00051	0.0011	0.00000092	0.0004	0.0004	0.00023	3.4	NB	0.000068	--
alpha-Chlordane	0.005	0.0027	0.0000091	0.00098	0.00099	0.00057	0.282	NB	0.002	--
alpha-Endosulfan	0.0043	0.0021	0.0000078	0.00076	0.00077	0.00045	NB	NB	--	--
alpha-Hexachlorocyclohexane	0.00046	0.00009	0.00000083	0.000033	0.000033	0.000019	NB	NB	--	--
beta-Endosulfan	0.00053	0.00055	0.00000096	0.0002	0.0002	0.00012	NB	NB	--	--
beta-Hexachlorocyclohexane	0.0025	0.00055	0.0000045	0.0002	0.0002	0.00012	NB	NB	--	--
delta-Hexachlorocyclohexane	0.0016	0.0007	0.0000029	0.00025	0.00026	0.00015	NB	NB	--	--
Dieldrin	0.012	0.0028	0.000022	0.001	0.001	0.0006	0.077	NB	0.0078	--
Endosulfan sulfate	0.0024	0.0009	0.0000043	0.00033	0.00033	0.00019	NB	NB	--	--
Endrin	0.0057	0.0009	0.00001	0.00033	0.00034	0.00019	0.01	NB	0.019	--
Endrin aldehyde	0.0018	0.0012	0.0000033	0.00043	0.00044	0.00025	NB	NB	--	--

Table F-32. (cont.)

	Concentration		Daily Exposure				TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Fish (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Endrin ketone	0.00059	0.0002	0.0000011	0.000072	0.000074	0.000043	NB	NB	--	--
gamma-Chlordane	0.019	0.0048	0.000034	0.0017	0.0018	0.001	0.282	NB	0.0036	--
gamma-Hexachlorocyclohexane	0.00089	0.00015	0.0000016	0.000054	0.000056	0.000032	42.5	NB	0.00000076	--
Heptachlor	0.0011	0.0009	0.000002	0.00033	0.00033	0.00019	9.2	NB	0.000021	--
Heptachlor epoxide	0.0055	0.0052	0.00001	0.0019	0.0019	0.0011	NB	NB	--	--
Methoxychlor	0.0021	0.0006	0.0000038	0.00022	0.00022	0.00013	10	NB	0.000013	--
Toxaphene	0.45	0.055	0.00082	0.02	0.021	0.012	NB	NB	--	--
Polychlorinated biphenyls	1.2	0.58	0.0022	0.21	0.21	0.12	0.41	1.8	0.3	0.068
Dioxins/Furans										
2,3,7,8-Tetrachlorodibenzo-p-dioxin	0.0000012	0.00000055	2.2E-09	0.0000002	0.0000002	0.00000012	0.000014	NB	0.0083	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	0.00000075	0.00000014	1.4E-09	0.000000051	0.000000052	0.00000003	0.000014	NB	0.0022	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	0.00000054	0.000000022	9.8E-10	0.000000008	8.9E-09	5.2E-09	0.000014	NB	0.00037	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.0000053	0.00000012	9.6E-09	0.000000043	0.000000053	0.000000031	0.000014	NB	0.0022	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.0000036	0.000000023	6.5E-09	8.3E-09	0.000000015	8.6E-09	0.000014	NB	0.00062	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.000068	0.00000015	0.00000012	0.000000054	0.00000018	0.0000001	0.000014	NB	0.0074	--
Octachlorodibenzo-p-dioxin	0.0013	0.000008	0.0000024	0.0000029	0.0000053	0.000003	0.000014	NB	0.22	--
2,3,7,8-Tetrachlorodibenzofuran	0.0000035	0.00000068	6.3E-09	0.00000025	0.00000025	0.00000015	0.000001	NB	0.15	--
1,2,3,7,8-Pentachlorodibenzofuran	0.0000014	0.000000063	2.5E-09	0.000000023	0.000000025	0.000000015	0.000014	NB	0.0011	--
2,3,4,7,8-Pentachlorodibenzofuran	0.0000017	0.00000032	3.1E-09	0.00000012	0.00000012	0.000000069	0.000014	NB	0.0049	--
1,2,3,4,7,8-Hexachlorodibenzofuran	0.0000044	0.000000044	0.000000008	0.000000016	0.000000024	0.000000014	0.000014	NB	0.00099	--
1,2,3,6,7,8-Hexachlorodibenzofuran	0.0000018	0.000000018	3.3E-09	6.5E-09	9.8E-09	5.7E-09	0.000014	NB	0.00041	--
2,3,4,6,7,8-Hexachlorodibenzofuran	0.000002	0.00000001	3.6E-09	3.6E-09	7.2E-09	4.2E-09	0.000014	NB	0.0003	--
1,2,3,7,8,9-Hexachlorodibenzofuran	0.00000024	0.000000009	4.3E-10	3.3E-09	3.7E-09	2.1E-09	0.000014	NB	0.00015	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.000021	0.0000001	0.000000038	0.000000036	0.000000074	0.000000043	0.000014	NB	0.0031	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.0000011	0.00000001	0.000000002	3.6E-09	5.6E-09	3.3E-09	0.000014	NB	0.00023	--
Octachlorodibenzofuran	0.000031	0.000000037	0.000000056	0.000000013	0.00000007	0.00000004	0.000014		0.0029	--
Dioxin/furan TCDD toxicity equivalent	0.0000090	0.0000017	0.000000016	0.00000062	0.00000063	0.00000037	0.000014	0.00014	0.026	0.0026
Inorganics										
Aluminum	15,000	41	27	15	42	24	120	NB	0.2	--
Antimony	13	0.013	0.023	0.0047	0.028	0.016	NB	NB	--	--
Arsenic	43	0.63	0.078	0.23	0.31	0.18	10	40	0.018	0.0044
Barium	65	1.2	0.12	0.43	0.55	0.32	21	42	0.015	0.0076
Beryllium	0.8	0.0019	0.0014	0.00069	0.0021	0.0012	NB	NB	--	--
Cadmium	1	0.01	0.0018	0.0036	0.0054	0.0032	1.5	20	0.0021	0.00016
Chromium	80	0.1	0.14	0.036	0.18	0.11	0.86	4.3	0.12	0.024
Cobalt	8.9	0.09	0.016	0.033	0.049	0.028	NB	NB	--	--
Copper	200	3.4	0.37	1.2	1.6	0.93	47	62	0.02	0.015
Iron	35000	97	64	35	99	57	NB	NB	--	--
Lead	130	0.19	0.24	0.069	0.31	0.18	3.9	11	0.046	0.016
Manganese	260	7.2	0.48	2.6	3.1	1.8	980	NB	0.0018	--
Mercury	1.3	0.021	0.0024	0.0076	0.01	0.0058	0.032	0.064	0.18	0.09

Table F-32. (cont.)

Analyte	Concentration Sediment (mg/kg dw)	Concentration Fish (mg/kg ww)	Daily Exposure Sediment (mg/day)	Daily Exposure Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV NOAEL (mg/kg-day)	TRV LOAEL (mg/kg-day)	Hazard Quotient NOAEL Hazard Quotient	Hazard Quotient LOAEL Hazard Quotient
Nickel	41	0.52	0.074	0.19	0.26	0.15	77	110	0.002	0.0014
Selenium	4.5	0.39	0.0082	0.14	0.15	0.087	0.4	0.8	0.22	0.11
Silver	2.9	0.055	0.0053	0.02	0.025	0.015	NB	NB	--	--
Thallium	0.27	0.0007	0.00049	0.00025	0.00074	0.00043	0.24	24	0.0018	0.000018
Vanadium	64	0.47	0.12	0.17	0.29	0.17	11	NB	0.015	--
Zinc	230	39	0.42	14	14	8.4	70	120	0.12	0.07

Note: -- - hazard quotient could not be calculated because there was no TRV available
BW - body weight
CoPC - chemical of potential concern
dw - dry weight
LOAEL - lowest-observed-adverse-effect level
NB - no benchmark
NOAEL - no-observed-adverse-effect level
PAH - polycyclic aromatic hydrocarbon
PCB - polychlorinated biphenyl
TRV - toxicity reference value
ww - wet weight

The following data were used to develop this scenario: surface sediment and fish data collected at reference river stations in 2004 (see Appendix Tables C-2, C-3, C-4, C-5, C-23, C-24, C-25 and C-26). Exposure point concentrations are means of detected values. However, if a chemical was undetected in all samples, its concentration was estimated as one-half of the maximum detection limit.

Table F-32a. Osprey EPC calculation based on media and prey CoPC data for reference reach of Raritan River

Medium/Prey	Survey Station	Date	Sample ID	Field Replicate	Units	Original Data/ Intermediate Calculation	Arsenic Concentration
Sediment							
	AQUAREF1	10/5/2004	SD0026	0	mg/kg		46.8
	AQUAREF2	10/4/2004	SD0013	0	mg/kg		98.9
	AQUAREF3	10/4/2004	SD0014	0	mg/kg		43.1
	AQUAREF4	10/6/2004	SD0032	0	mg/kg		21.5
	AQUAREF5	10/6/2004	SD0031	0	mg/kg		5.95
						Reference Mean	43.3
						Reference mean - 2 significant digits	43
Fish							
	AQUAREF1	10/7/2004	FI0109-D	1	mg/kg	0.47	
	AQUAREF1	10/7/2004	FI0109-D	2	mg/kg	0.6	
	AQUAREF1	10/7/2004	FI0109-D	3	mg/kg	0.7	
						Field Rep. Average	0.59
	AQUAREF4	10/7/2004	FI0112-D	1	mg/kg	0.67	
	AQUAREF4	10/7/2004	FI0112-D	2	mg/kg	0.67	
						Field Rep. Average	0.67
						Reference Mean	0.63

Note: Mean detected values used for 2004 reference river surface sediment and fish.

Estuarine fish and crab data were from whole body composite samples.

CoPC - chemical of potential concern
EPC - exposure point concentration

Table F-33. Food web model results for herring gull based on media and prey CoPC data for Raritan River reach at OU-3

	Concentration			Daily Exposure					TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Fish (mg/kg ww)	Crabs (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	Area Use Adjusted Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Semivolatile Organic Compounds												
2,4,5-Trichlorophenol	0.011	0.009	0.011	0.00006	0.0021	0.0022	0.0022	0.000019	NB	NB	--	--
2,4,6-Trichlorophenol	0.019	0.047	0.009	0.0001	0.0059	0.006	0.006	0.000054	NB	NB	--	--
2,4-Dichlorophenol	0.019	0.065	0.012	0.0001	0.0081	0.0082	0.0082	0.000073	NB	NB	--	--
2,4-Dimethylphenol	0.06	0.07	0.013	0.00033	0.0087	0.009	0.009	0.000081	NB	NB	--	--
2,4-Dinitrophenol	0.37	0.13	0.023	0.002	0.016	0.018	0.018	0.00016	NB	NB	--	--
2,4-Dinitrotoluene	0.017	0.07	0.0085	0.000093	0.0082	0.0083	0.0083	0.000075	NB	NB	--	--
2,6-Dinitrotoluene	0.029	0.051	0.007	0.00016	0.0061	0.0062	0.0062	0.000056	NB	NB	--	--
2-Chloronaphthalene	0.037	0.032	0.006	0.0002	0.004	0.0042	0.0042	0.000038	NB	NB	--	--
2-Chlorophenol	0.018	0.06	0.011	0.000099	0.0075	0.0076	0.0076	0.000068	NB	NB	--	--
2-Methyl-4,6-dinitrophenol	0.018	0.08	0.015	0.000099	0.01	0.01	0.01	0.00009	0.454	NB	0.0002	--
2-Methylnaphthalene	0.015	0.0021	0.0014	0.000082	0.00037	0.00045	0.00045	0.000004	NB	NB	--	--
2-Methylphenol	0.035	0.29	0.055	0.00019	0.036	0.036	0.036	0.00033	NB	NB	--	--
2-Nitroaniline	0.028	0.14	0.026	0.00015	0.017	0.018	0.018	0.00016	NB	NB	--	--
2-Nitrophenol	0.027	0.08	0.015	0.00015	0.01	0.01	0.01	0.000091	NB	NB	--	--
3,3'-Dichlorobenzidine	0.038	4.2	0.8	0.00021	0.53	0.53	0.53	0.0047	NB	NB	--	--
3-Nitroaniline	0.027	0.048	0.009	0.00015	0.006	0.0061	0.0061	0.000055	NB	NB	--	--
4-Bromophenyl ether	0.015	0.03	0.0055	0.000082	0.0037	0.0038	0.0038	0.000034	NB	NB	--	--
4-Chloro-3-methylphenol	0.022	0.39	0.075	0.00012	0.049	0.049	0.049	0.00044	NB	NB	--	--
4-Chloroaniline	0.0058	0.032	0.006	0.000032	0.004	0.004	0.004	0.000036	NB	NB	--	--
4-Chlorophenyl-phenyl ether	0.021	0.024	0.0045	0.00012	0.003	0.0031	0.0031	0.000028	NB	NB	--	--
4-Methylphenol	0.015	0.03	0.015	0.000082	0.0047	0.0048	0.0048	0.000043	NB	NB	--	--
4-Nitroaniline	0.035	0.14	0.026	0.00019	0.017	0.018	0.018	0.00016	NB	NB	--	--
4-Nitrophenol	0.31	0.04	0.0075	0.0017	0.005	0.0067	0.0067	0.00006	NB	NB	--	--
Acenaphthene	0.0043	0.0014	0.00045	0.000024	0.00019	0.00022	0.00022	0.0000019	NB	NB	--	--
Acenaphthylene	0.022	0.0004	0.00055	0.00012	0.0001	0.00022	0.00022	0.000002	NB	NB	--	--
Acetophenone	0.024	0.016	0.042	0.00013	0.0061	0.0062	0.0062	0.000056	NB	NB	--	--
Anthracene	0.033	0.001	0.0006	0.00018	0.00017	0.00035	0.00035	0.0000031	NB	NB	--	--
Atrazine	0.023	0.18	0.085	0.00013	0.028	0.028	0.028	0.00025	NB	NB	--	--
Benz[a]anthracene	0.08	0.001	0.0015	0.00044	0.00026	0.0007	0.0007	0.0000063	NB	NB	--	--
Benzaldehyde	0.05	3.9	0.75	0.00027	0.49	0.49	0.49	0.0044	NB	NB	--	--
Benzo[a]pyrene	0.09	0.001	0.001	0.00049	0.00021	0.0007	0.0007	0.0000063	NB	NB	--	--
Benzo[b]fluoranthene	0.15	0.0009	0.0012	0.00082	0.00022	0.001	0.001	0.0000093	NB	NB	--	--
Benzo[ghi]perylene	0.08	0.0006	0.0009	0.00044	0.00016	0.0006	0.0006	0.0000053	NB	NB	--	--
Benzo[k]fluoranthene	0.05	0.001	0.0011	0.00027	0.00022	0.00049	0.00049	0.0000044	NB	NB	--	--
Biphenyl	0.049	0.025	0.0047	0.00027	0.0031	0.0034	0.0034	0.00003	NB	NB	--	--
bis[2-chloroethoxy]methane	0.014	0.027	0.005	0.000077	0.0034	0.0034	0.0034	0.000031	NB	NB	--	--
bis[2-chloroethyl]ether	0.025	0.047	0.009	0.00014	0.0059	0.006	0.006	0.000054	NB	NB	--	--
Bis[2-chloroisopropyl]ether	0.013	0.06	0.011	0.000071	0.0075	0.0075	0.0075	0.000067	NB	NB	--	--
bis[2-Ethylhexyl]phthalate	4	0.1	0.07	0.022	0.018	0.04	0.04	0.00036	1.2	NB	0.0003	--
Butylbenzyl phthalate	0.023	0.38	0.014	0.00013	0.041	0.041	0.041	0.00037	NB	NB	--	--
Caprolactam	0.13	0.07	0.026	0.00071	0.01	0.011	0.011	0.000097	NB	NB	--	--
Carbazole	0.007	0.18	0.033	0.000038	0.022	0.022	0.022	0.0002	NB	NB	--	--
Chrysene	0.12	0.001	0.0016	0.00066	0.00027	0.00093	0.00093	0.0000083	NB	NB	--	--
Dibenz[a,h]anthracene	0.018	0.00021	0.00042	0.000099	0.000066	0.00016	0.00016	0.0000015	NB	NB	--	--
Dibenzofuran	0.006	0.0011	0.0002	0.000033	0.00014	0.00017	0.00017	0.0000015	NB	NB	--	--
Diethyl phthalate	0.036	0.13	0.0095	0.0002	0.015	0.015	0.015	0.00013	NB	NB	--	--
Dimethyl phthalate	0.019	0.12	0.0055	0.0001	0.013	0.013	0.013	0.00012	NB	NB	--	--

Table F-33. (cont.)

	Concentration			Daily Exposure					TRV		Hazard Quotient	
Analyte	Sediment (mg/kg dw)	Fish (mg/kg ww)	Crabs (mg/kg ww)	Sediment (mg/day)	Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	Area Use Adjusted Exposure (mg/kg-day)	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Di-n-butyl phthalate	0.016	1.4	0.34	0.000088	0.18	0.18	0.18	0.0016	NB	NB	--	--
Di-n-octyl phthalate	0.078	0.07	0.013	0.00043	0.0087	0.0091	0.0091	0.000082	NB	NB	--	--
Fluoranthene	0.19	0.004	0.0021	0.001	0.00064	0.0017	0.0017	0.000015	NB	NB	--	--
Fluorene	0.007	0.0011	0.00037	0.000038	0.00015	0.00019	0.00019	0.0000017	NB	NB	--	--
Hexachlorobenzene	0.022	0.032	0.006	0.00012	0.004	0.0041	0.0041	0.000037	NB	NB	--	--
Hexachlorobutadiene	0.015	0.046	0.0085	0.000082	0.0057	0.0058	0.0058	0.000052	NB	NB	--	--
Hexachlorocyclopentadiene	0.16	27	5	0.00088	3.4	3.4	3.4	0.03	NB	NB	--	--
Hexachloroethane	0.023	0.046	0.0085	0.00013	0.0057	0.0058	0.0058	0.000052	NB	NB	--	--
Indeno[1,2,3-cd]pyrene	0.07	0.0007	0.001	0.00038	0.00018	0.00056	0.00056	0.000005	NB	NB	--	--
Isophorone	0.017	0.025	0.006	0.000093	0.0033	0.0033	0.0033	0.00003	NB	NB	--	--
Naphthalene	0.024	0.0028	0.0055	0.00013	0.00087	0.001	0.001	0.000009	NB	NB	--	--
Nitrobenzene	0.021	0.055	0.01	0.00012	0.0068	0.0069	0.0069	0.000062	NB	NB	--	--
N-nitroso-di-n-propylamine	0.033	0.044	0.0085	0.00018	0.0055	0.0057	0.0057	0.000051	NB	NB	--	--
N-nitrosodiphenylamine	0.044	0.055	0.0095	0.00024	0.0068	0.007	0.007	0.000063	NB	NB	--	--
Pentachlorophenol	0.09	0.17	0.031	0.00049	0.021	0.022	0.022	0.00019	NB	NB	--	--
Phenanthrene	0.05	0.002	0.001	0.00027	0.00032	0.00059	0.00059	0.0000053	NB	NB	--	--
Phenol	0.04	0.15	0.058	0.00022	0.022	0.022	0.022	0.0002	NB	NB	--	--
Pyrene	0.22	0.003	0.0022	0.0012	0.00055	0.0018	0.0018	0.000016	NB	NB	--	--
Total PAHs	1.3	0.02	0.022	0.0071	0.0044	0.012	0.012	0.0001	0.14	1.4	0.00074	0.000074
Pesticides/PCBs												
4,4'-DDD	0.012	0.025	0.01	0.000066	0.0037	0.0037	0.0037	0.000033	57.9	NB	0.00000058	--
4,4'-DDE	0.012	0.029	0.016	0.000066	0.0047	0.0048	0.0048	0.000043	82.9	NB	0.00000052	--
4,4'-DDT	0.02	0.01	0.0053	0.00011	0.0016	0.0017	0.0017	0.000015	0.5	NB	0.000031	--
Aldrin	0.0025	0.0012	0.00034	0.000014	0.00016	0.00018	0.00018	0.0000016	3.4	NB	0.00000046	--
alpha-Chlordane	0.0019	0.0029	0.0008	0.00001	0.00039	0.0004	0.0004	0.0000036	0.282	NB	0.000013	--
alpha-Endosulfan	0.003	0.0033	0.003	0.000016	0.00066	0.00068	0.00068	0.0000061	NB	NB	--	--
alpha-Hexachlorocyclohexane	0.00069	0.00013	0.00018	0.0000038	0.000033	0.000036	0.000036	0.00000033	NB	NB	--	--
beta-Endosulfan	0.012	0.0014	0.00037	0.000066	0.00019	0.00025	0.00025	0.0000023	NB	NB	--	--
beta-Hexachlorocyclohexane	0.0009	0.0009	0.0011	0.0000049	0.00021	0.00021	0.00021	0.0000019	NB	NB	--	--
delta-Hexachlorocyclohexane	0.00034	0.0008	0.00036	0.0000019	0.00012	0.00012	0.00012	0.0000011	NB	NB	--	--
Dieldrin	0.00054	0.0027	0.0021	0.000003	0.0005	0.00051	0.00051	0.0000045	0.077	NB	0.000059	--
Endosulfan sulfate	0.0016	0.0012	0.00055	0.0000088	0.00018	0.00019	0.00019	0.0000017	NB	NB	--	--
Endrin	0.0074	0.0013	0.0029	0.000041	0.00044	0.00048	0.00048	0.0000043	0.01	NB	0.00043	--
Endrin aldehyde	0.0022	0.0021	0.00057	0.000012	0.00028	0.00029	0.00029	0.0000026	NB	NB	--	--
Endrin ketone	0.00055	0.001	0.0018	0.000003	0.00029	0.0003	0.0003	0.0000027	NB	NB	--	--
gamma-Chlordane	0.01	0.007	0.0047	0.000055	0.0012	0.0013	0.0013	0.000011	0.282	NB	0.000041	--
gamma-Hexachlorocyclohexane	0.0022	0.0004	0.0011	0.000012	0.00016	0.00017	0.00017	0.0000015	42.5	NB	0.000000036	--
Heptachlor	0.0014	0.0008	0.00048	0.0000077	0.00013	0.00014	0.00014	0.0000013	9.2	NB	0.00000014	--
Heptachlor epoxide	0.00068	0.0048	0.0034	0.0000037	0.00086	0.00086	0.00086	0.0000077	NB	NB	--	--
Methoxychlor	0.00085	0.0035	0.00029	0.0000047	0.0004	0.0004	0.0004	0.0000036	10	NB	0.00000036	--
Toxaphene	0.26	0.1	0.035	0.0014	0.014	0.016	0.016	0.00014	NB	NB	--	--
Polychlorinated biphenyls	1.4	0.59	0.056	0.0077	0.068	0.076	0.076	0.00068	0.41	1.8	0.0016	0.00038
Dioxins/Furans												
2,3,7,8-Tetrachlorodibenzo-p-dioxin	0.00000049	0.00000048	0.00000049	2.7E-09	0.0000001	0.0000001	0.0000001	9.4E-10	0.000014	NB	0.000067	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	0.00000032	0.00000013	0.00000013	1.8E-09	0.000000027	0.000000029	0.000000029	2.6E-10	0.000014	NB	0.000019	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	0.00000044	0.00000003	0.00000005	2.4E-09	8.4E-09	0.000000011	0.000000011	9.7E-11	0.000014	NB	0.0000069	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.0000023	0.00000017	0.00000016	0.000000013	0.000000035	0.000000047	0.000000047	4.2E-10	0.000014	NB	0.00003	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.0000018	0.00000006	0.000000037	9.9E-09	0.00000001	0.00000002	0.00000002	1.8E-10	0.000014	NB	0.000013	--

Table F-33. (cont.)

Analyte	Concentration: Sediment (mg/kg dw)	Concentration: Fish (mg/kg ww)	Concentration: Crabs (mg/kg ww)	Daily Exposure: Sediment (mg/day)	Daily Exposure: Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	Area Use Adjusted Exposure (mg/kg-day)	TRV: NOAEL (mg/kg-day)	TRV: LOAEL (mg/kg-day)	Hazard Quotient: NOAEL Hazard Quotient	Hazard Quotient: LOAEL Hazard Quotient
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.000033	0.0000012	0.0000013	0.00000018	0.00000026	0.00000044	0.00000044	4E-09	0.000014	NB	0.00028	--
Octachlorodibenzo-p-dioxin	0.0009	0.000029	0.000027	0.0000049	0.0000059	0.000011	0.000011	9.7E-08	0.000014	NB	0.0069	--
2,3,7,8-Tetrachlorodibenzofuran	0.0000019	0.00000051	0.000002	0.00000001	0.00000026	0.00000027	0.00000027	2.5E-09	0.000001	NB	0.0025	--
1,2,3,7,8-Pentachlorodibenzofuran	0.00000081	0.000000063	0.00000021	4.4E-09	0.000000029	0.000000033	0.000000033	3E-10	0.000014	NB	0.000021	--
2,3,4,7,8-Pentachlorodibenzofuran	0.000001	0.0000003	0.00000026	5.5E-09	0.000000059	0.000000064	0.000000064	5.8E-10	0.000014	NB	0.000041	--
1,2,3,4,7,8-Hexachlorodibenzofuran	0.0000026	0.00000011	0.00000012	0.000000014	0.000000024	0.000000038	0.000000038	3.4E-10	0.000014	NB	0.000025	--
1,2,3,6,7,8-Hexachlorodibenzofuran	0.000001	0.000000056	0.000000064	5.5E-09	0.000000013	0.000000018	0.000000018	1.6E-10	0.000014	NB	0.000012	--
2,3,4,6,7,8-Hexachlorodibenzofuran	0.0000011	0.000000008	0.000000027	0.000000006	3.7E-09	9.7E-09	9.7E-09	8.7E-11	0.000014	NB	0.0000062	--
1,2,3,7,8,9-Hexachlorodibenzofuran	0.00000015	0.000000007	0.000000025	8.2E-10	3.4E-09	4.2E-09	4.2E-09	3.7E-11	0.000014	NB	0.0000027	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.000011	0.00000043	0.00000026	0.00000006	0.000000072	0.00000013	0.00000013	1.2E-09	0.000014	NB	0.000085	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.0000008	0.000000011	0.000000051	4.4E-09	6.5E-09	0.000000011	0.000000011	9.7E-11	0.000014	NB	0.000007	--
Octachlorodibenzofuran	0.000032	0.00000031	0.00000052	0.00000018	0.000000087	0.00000026	0.00000026	2.3E-09	0.000014	NB	0.00017	--
Dioxin/furan TCDD toxicity equivalent	0.0000048	0.0000015	0.000003	0.000000026	0.00000047	0.0000005	0.0000005	4.5E-09	0.000014	0.00014	0.00032	0.000032
Inorganic Analytes												
Aluminum	13,000	63	160	69	23	92	92	0.82	120	NB	0.0069	--
Antimony	12	0.013	0.018	0.065	0.0033	0.068	0.068	0.00061	NB	NB	--	--
Arsenic	97	0.9	1.1	0.53	0.21	0.74	0.74	0.0066	10	40	0.00066	0.00017
Barium	64	1.2	18	0.35	2	2.4	2.4	0.021	21	42	0.001	0.00051
Beryllium	0.8	0.005	0.006	0.0044	0.0012	0.0055	0.0055	0.00005	NB	NB	--	--
Cadmium	0.8	0.009	0.026	0.0044	0.0037	0.0081	0.0081	0.000072	1.5	20	0.000048	0.0000036
Chromium	130	0.19	0.44	0.72	0.066	0.79	0.79	0.0071	0.86	4.3	0.0082	0.0016
Cobalt	7	0.09	0.23	0.038	0.034	0.072	0.072	0.00064	NB	NB	--	--
Copper	230	3.8	15	1.2	2	3.2	3.2	0.029	47	62	0.00061	0.00046
Iron	42,000	110	310	230	44	270	270	2.4	NB	NB	--	--
Lead	110	0.2	0.4	0.6	0.063	0.67	0.67	0.006	3.9	11	0.0015	0.00054
Manganese	220	6.7	92	1.2	10	12	12	0.1	980	NB	0.00011	--
Mercury	1.4	0.025	0.019	0.0077	0.0046	0.012	0.012	0.00011	0.032	0.064	0.0034	0.0017
Nickel	6.8	0.54	1.2	0.037	0.18	0.22	0.22	0.002	77	110	0.000026	0.000018
Selenium	3	0.49	0.31	0.016	0.084	0.1	0.1	0.0009	0.4	0.8	0.0022	0.0011
Silver	5.2	0.07	0.21	0.029	0.029	0.058	0.058	0.00052	NB	NB	--	--
Thallium	0.19	0.0008	0.0013	0.001	0.00022	0.0013	0.0013	0.000011	0.24	24	0.000047	0.00000047
Vanadium	92	0.5	0.6	0.5	0.12	0.62	0.62	0.0055	11	NB	0.0005	--
Zinc	210	38	15	1.2	5.6	6.7	6.7	0.06	70	120	0.00086	0.0005

Note:
-- - hazard quotient could not be calculated because there was no TRV available
BW - body weight
CoPC - chemical of potential concern
dw - dry weight
LOAEL - lowest-observed-adverse-effect level
NB - no benchmark
NOAEL - no-observed-adverse-effect level
OU-3 - Operable Unit 3
PAH - polycyclic aromatic hydrocarbon
PCB - polychlorinated biphenyl
TRV - toxicity reference value
ww - wet weight

The following data were used to develop this scenario: surface sediment, crab and fish data collected at river stations in 2004 (see Appendix Tables C-2, C-3, C-4, C-5, C-18, C-19, C-20, C-21, C-23, C-24, C-25 and C-26).

Exposure point concentrations are means of detected values. However, if a chemical was undetected in all samples, its concentration was estimated as one-half of the maximum detection limit.

Table F-33a. Herring gull EPC calculation based on media and prey CoPC data for Raritan River reach at OU-3

Medium/Prey	Survey Station	Date	Sample ID	Field Replicate	Units	Original Data/ Intermediate Calculation	Arsenic Concentration
Sediment							
	1	10/5/2004	SD0025	0	mg/kg		17
	2	10/5/2004	SD0024	0	mg/kg		216
	3	10/5/2004	SD0023	0	mg/kg		311
	4	10/5/2004	SD0022	0	mg/kg		266
	5	10/1/2004	SD0008	0	mg/kg		33.1
	6	10/1/2004	SD0009	0	mg/kg		71.7
	7R	10/6/2004	SD0034	0	mg/kg		9.13
	8	10/1/2004	SD0010D	1	mg/kg	27.4	
	8	10/1/2004	SD0010D	2	mg/kg	27.5	
						Field Rep. Average	27.5
	9	10/1/2004	SD0012	0	mg/kg		11
	10	10/6/2004	SD0033	0	mg/kg		10.8
						OU-3 Mean	107
Fish							
	1	10/7/2004	FI0079-D	1	mg/kg	0.63	
	1	10/7/2004	FI0079-D	2	mg/kg	0.53	
	1	10/7/2004	FI0079-D	3	mg/kg	0.62	
						Field Rep. Average	0.59
	2	10/7/2004	FI0082-D	1	mg/kg	0.72	
	2	10/7/2004	FI0082-D	2	mg/kg	0.63	
	2	10/7/2004	FI0082-D	3	mg/kg	0.71	
						Field Rep. Average	0.69
	3	10/7/2004	FI0085-D	1	mg/kg	0.58	
	3	10/7/2004	FI0085-D	2	mg/kg	1.2	
	3	10/7/2004	FI0085-D	3	mg/kg	1	
						Field Rep. Average	0.93
	4	10/7/2004	FI0088-D	1	mg/kg	1.1	
	4	10/7/2004	FI0088-D	2	mg/kg	1.4	
	4	10/7/2004	FI0088-D	3	mg/kg	1.1	
						Field Rep. Average	1.2
	5	10/7/2004	FI0091-D	1	mg/kg	1.1	
	5	10/7/2004	FI0091-D	2	mg/kg	1.2	
	5	10/7/2004	FI0091-D	3	mg/kg	1.1	
						Field Rep. Average	1.1
	6	10/7/2004	FI0094-D	1	mg/kg	1.1	
	6	10/7/2004	FI0094-D	2	mg/kg	1.1	
	6	10/7/2004	FI0094-D	3	mg/kg	1.1	
						Field Rep. Average	1.1
	7R	10/7/2004	FI0097-D	1	mg/kg	0.59	
	7R	10/7/2004	FI0097-D	2	mg/kg	0.65	
	7R	10/7/2004	FI0097-D	3	mg/kg	0.64	
						Field Rep. Average	0.63
	8	10/7/2004	FI0100-D	1	mg/kg	0.81	
	8	10/7/2004	FI0100-D	2	mg/kg	0.9	
	8	10/7/2004	FI0100-D	3	mg/kg	1	
						Field Rep. Average	0.90

Table F-33a. (cont.)

Medium/Prey	Survey Station	Date	Sample ID	Field Replicate	Units	Original Data/ Intermediate Calculation	Arsenic Concentration
	9	10/7/2004	FI0103-D	1	mg/kg	0.6	
	9	10/7/2004	FI0103-D	2	mg/kg	0.8	
	9	10/7/2004	FI0103-D	3	mg/kg	0.58	
						Field Rep. Average	0.66
	10	10/7/2004	FI0106-D	1	mg/kg	0.56	
	10	10/7/2004	FI0106-D	2	mg/kg	0.77	
	10	10/7/2004	FI0106-D	3	mg/kg	0.63	
						Field Rep. Average	0.65
						OU-3 Mean	0.87
						OU-3 mean - 1 significant digit	0.9
Crab							
	3	10/5/2004	CompStation3	0	mg/kg		0.82 *J*
	5	10/1/2004	CompStation5	0	mg/kg		2.7 *J*
	6	10/1/2004	CompStation6	0	mg/kg		0.76 *J*
	7R	10/6/2004	CompStation7	0	mg/kg		0.66 *J*
	8	10/1/2004	CompStation8	0	mg/kg		1.2 *J*
	9	10/1/2004	CompStation9	0	mg/kg		0.83 *J*
	10	10/6/2004	CR0005	0	mg/kg		0.85 *J*
						OU-3 Mean	1.2 *J*

Note: Mean detected values used for 2004 river surface sediment, fish, and whole crab.

Estuarine fish and crab data were from whole body composite samples.

CoPC - chemical of potential concern
EPC - exposure point concentration
J - estimated value

Table F-34. Food web model results for herring gull based on media and prey CoPC data for reference reach of Raritan River

Analyte	Concentration: Sediment (mg/kg dw)	Concentration: Fish (mg/kg ww)	Concentration: Crabs (mg/kg ww)	Daily Exposure: Sediment (mg/day)	Daily Exposure: Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV: NOAEL (mg/kg-day)	TRV: LOAEL (mg/kg-day)	Hazard Quotient: NOAEL Hazard Quotient	Hazard Quotient: LOAEL Hazard Quotient
Semivolatile Organic Compounds[a]											
2,4,5-Trichlorophenol	0.007	0.06	0.06	0.000038	0.013	0.013	0.013	NB	NB	--	--
2,4,6-Trichlorophenol	0.004	0.047	0.047	0.000022	0.0099	0.0099	0.0099	NB	NB	--	--
2,4-Dichlorophenol	0.004	0.065	0.065	0.000022	0.014	0.014	0.014	NB	NB	--	--
2,4-Dimethylphenol	0.013	0.07	0.07	0.000071	0.015	0.015	0.015	NB	NB	--	--
2,4-Dinitrophenol	0.08	0.13	0.13	0.00044	0.027	0.028	0.028	NB	NB	--	--
2,4-Dinitrotoluene	0.0065	0.046	0.046	0.000036	0.0097	0.0097	0.0097	NB	NB	--	--
2,6-Dinitrotoluene	0.0065	0.038	0.038	0.000036	0.008	0.008	0.008	NB	NB	--	--
2-Chloronaphthalene	0.008	0.032	0.032	0.000044	0.0067	0.0068	0.0068	NB	NB	--	--
2-Chlorophenol	0.0038	0.06	0.06	0.000021	0.013	0.013	0.013	NB	NB	--	--
2-Methyl-4,6-dinitrophenol	0.0038	0.08	0.08	0.000021	0.017	0.017	0.017	0.454	NB	0.037	--
2-Methylnaphthalene	0.012	0.0022	0.0022	0.000066	0.00046	0.00053	0.00053	NB	NB	--	--
2-Methylphenol	0.0075	0.29	0.29	0.000041	0.061	0.061	0.061	NB	NB	--	--
2-Nitroaniline	0.006	0.14	0.14	0.000033	0.029	0.029	0.029	NB	NB	--	--
2-Nitrophenol	0.006	0.08	0.08	0.000033	0.017	0.017	0.017	NB	NB	--	--
3,3'-Dichlorobenzidine	0.0085	4.2	4.2	0.000047	0.88	0.88	0.88	NB	NB	--	--
3-Nitroaniline	0.006	0.048	0.048	0.000033	0.01	0.01	0.01	NB	NB	--	--
4-Bromophenyl ether	0.0031	0.03	0.03	0.000017	0.0063	0.0063	0.0063	NB	NB	--	--
4-Chloro-3-methylphenol	0.0047	0.39	0.39	0.000026	0.082	0.082	0.082	NB	NB	--	--
4-Chloroaniline	0.0047	0.032	0.032	0.000026	0.0067	0.0067	0.0067	NB	NB	--	--
4-Chlorophenyl-phenyl ether	0.0044	0.024	0.024	0.000024	0.005	0.0051	0.0051	NB	NB	--	--
4-Methylphenol	0.019	0.08	0.08	0.0001	0.017	0.017	0.017	NB	NB	--	--
4-Nitroaniline	0.0075	0.14	0.14	0.000041	0.029	0.029	0.029	NB	NB	--	--
4-Nitrophenol	0.07	0.04	0.04	0.00038	0.0084	0.0088	0.0088	NB	NB	--	--
Acenaphthene	0.005	0.0012	0.0012	0.000027	0.00025	0.00028	0.00028	NB	NB	--	--
Acenaphthylene	0.019	0.00048	0.00048	0.0001	0.0001	0.0002	0.0002	NB	NB	--	--
Acetophenone	0.027	0.11	0.11	0.00015	0.023	0.023	0.023	NB	NB	--	--
Anthracene	0.031	0.00072	0.00072	0.00017	0.00015	0.00032	0.00032	NB	NB	--	--
Atrazine	0.0049	0.03	0.03	0.000027	0.0063	0.0063	0.0063	NB	NB	--	--
Benz[a]anthracene	0.06	0.0007	0.0007	0.00033	0.00015	0.00048	0.00048	NB	NB	--	--
Benzaldehyde	0.028	3.9	3.9	0.00015	0.82	0.82	0.82	NB	NB	--	--
Benzo[a]pyrene	0.07	0.000041	0.000041	0.00038	0.0000086	0.00039	0.00039	NB	NB	--	--
Benzo[b]fluoranthene	0.1	0.0006	0.0006	0.00055	0.00013	0.00067	0.00067	NB	NB	--	--
Benzo[ghi]perylene	0.06	0.00052	0.00052	0.00033	0.00011	0.00044	0.00044	NB	NB	--	--
Benzo[k]fluoranthene	0.033	0.0006	0.0006	0.00018	0.00013	0.00031	0.00031	NB	NB	--	--
Biphenyl	0.011	0.026	0.026	0.00006	0.0055	0.0055	0.0055	NB	NB	--	--
bis[2-chloroethoxy]methane	0.0029	0.027	0.027	0.000016	0.0057	0.0057	0.0057	NB	NB	--	--
bis[2-chloroethyl]ether	0.0055	0.047	0.047	0.00003	0.0099	0.0099	0.0099	NB	NB	--	--
Bis[2-chloroisopropyl]ether	0.0027	0.06	0.06	0.000015	0.013	0.013	0.013	NB	NB	--	--
bis[2-Ethylhexyl]phthalate	0.6	0.8	0.8	0.0033	0.17	0.17	0.17	1.2	NB	0.14	--
Butylbenzyl phthalate	0.018	0.33	0.33	0.000099	0.069	0.069	0.069	NB	NB	--	--
Caprolactam	0.027	0.07	0.07	0.00015	0.015	0.015	0.015	NB	NB	--	--

Table F-34. (cont.)

Analyte	Concentration Sediment (mg/kg dw)	Concentration Fish (mg/kg ww)	Concentration Crabs (mg/kg ww)	Daily Exposure Sediment (mg/day)	Daily Exposure Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV NOAEL (mg/kg-day)	TRV LOAEL (mg/kg-day)	NOAEL Hazard Quotient	LOAEL Hazard Quotient
Carbazole	0.008	0.18	0.18	0.000044	0.038	0.038	0.038	NB	NB	--	--
Chrysene	0.05	0.0009	0.0009	0.00027	0.00019	0.00046	0.00046	NB	NB	--	--
Dibenz[a,h]anthracene	0.014	0.0001	0.0001	0.000077	0.000021	0.000098	0.000098	NB	NB	--	--
Dibenzofuran	0.009	0.001	0.001	0.000049	0.00021	0.00026	0.00026	NB	NB	--	--
Diethyl phthalate	0.008	0.055	0.055	0.000044	0.012	0.012	0.012	NB	NB	--	--
Dimethyl phthalate	0.004	0.047	0.047	0.000022	0.0099	0.0099	0.0099	NB	NB	--	--
Di-n-butyl phthalate	0.012	1.2	1.2	0.000066	0.25	0.25	0.25	NB	NB	--	--
Di-n-octyl phthalate	0.0027	0.07	0.07	0.000015	0.015	0.015	0.015	NB	NB	--	--
Fluoranthene	0.12	0.0023	0.0023	0.00066	0.00048	0.0011	0.0011	NB	NB	--	--
Fluorene	0.01	0.001	0.001	0.000055	0.00021	0.00026	0.00026	NB	NB	--	--
Hexachlorobenzene	0.0047	0.032	0.032	0.000026	0.0067	0.0067	0.0067	NB	NB	--	--
Hexachlorobutadiene	0.0031	0.046	0.046	0.000017	0.0097	0.0097	0.0097	NB	NB	--	--
Hexachlorocyclopentadiene	0.033	27	27	0.00018	5.7	5.7	5.7	NB	NB	--	--
Hexachloroethane	0.0049	0.046	0.046	0.000027	0.0097	0.0097	0.0097	NB	NB	--	--
Indeno[1,2,3-cd]pyrene	0.05	0.00053	0.00053	0.00027	0.00011	0.00039	0.00039	NB	NB	--	--
Isophorone	0.0036	0.031	0.031	0.00002	0.0065	0.0065	0.0065	NB	NB	--	--
Naphthalene	0.024	0.002	0.002	0.00013	0.00042	0.00055	0.00055	NB	NB	--	--
Nitrobenzene	0.0044	0.055	0.055	0.000024	0.012	0.012	0.012	NB	NB	--	--
N-nitroso-di-n-propylamine	0.0075	0.044	0.044	0.000041	0.0092	0.0093	0.0093	NB	NB	--	--
N-nitrosodiphenylamine	0.019	0.055	0.055	0.0001	0.012	0.012	0.012	NB	NB	--	--
Pentachlorophenol	0.019	0.17	0.17	0.0001	0.036	0.036	0.036	NB	NB	--	--
Phenanthrene	0.04	0.0016	0.0016	0.00022	0.00034	0.00056	0.00056	NB	NB	--	--
Phenol	0.024	0.21	0.21	0.00013	0.044	0.044	0.044	NB	NB	--	--
Pyrene	0.13	0.0019	0.0019	0.00071	0.0004	0.0011	0.0011	NB	NB	--	--
Total PAHs	1.1	0.017	0.017	0.006	0.0036	0.0096	0.0096	0.14	1.4	0.069	0.0069
Pesticides/PCBs[a]											
4,4'-DDD	0.013	0.025	0.025	0.000071	0.0053	0.0053	0.0053	57.9	NB	0.000092	--
4,4'-DDE	0.03	0.027	0.027	0.00016	0.0057	0.0058	0.0058	82.9	NB	0.00007	--
4,4'-DDT	0.019	0.009	0.009	0.0001	0.0019	0.002	0.002	0.5	NB	0.004	--
Aldrin	0.00051	0.0011	0.0011	0.0000028	0.00023	0.00023	0.00023	3.4	NB	0.000069	--
alpha-Chlordane	0.005	0.0027	0.0027	0.000027	0.00057	0.00059	0.00059	0.282	NB	0.0021	--
alpha-Endosulfan	0.0043	0.0021	0.0021	0.000024	0.00044	0.00046	0.00046	NB	NB	--	--
alpha-Hexachlorocyclohexane	0.00046	0.00009	0.00009	0.0000025	0.000019	0.000021	0.000021	NB	NB	--	--
beta-Endosulfan	0.00053	0.00055	0.00055	0.0000029	0.00012	0.00012	0.00012	NB	NB	--	--
beta-Hexachlorocyclohexane	0.0025	0.00055	0.00055	0.000014	0.00012	0.00013	0.00013	NB	NB	--	--
delta-Hexachlorocyclohexane	0.0016	0.0007	0.0007	0.0000088	0.00015	0.00016	0.00016	NB	NB	--	--
Dieldrin	0.012	0.0028	0.0028	0.000066	0.00059	0.00065	0.00065	0.077	NB	0.0085	--
Endosulfan sulfate	0.0024	0.0009	0.0009	0.000013	0.00019	0.0002	0.0002	NB	NB	--	--
Endrin	0.0057	0.0009	0.0009	0.000031	0.00019	0.00022	0.00022	0.01	NB	0.022	--
Endrin aldehyde	0.0018	0.0012	0.0012	0.0000099	0.00025	0.00026	0.00026	NB	NB	--	--
Endrin ketone	0.00059	0.0002	0.0002	0.0000032	0.000042	0.000045	0.000045	NB	NB	--	--
gamma-Chlordane	0.019	0.0048	0.0048	0.0001	0.001	0.0011	0.0011	0.282	NB	0.0039	--

Table F-34. (cont.)

Analyte	Concentration: Sediment (mg/kg dw)	Concentration: Fish (mg/kg ww)	Concentration: Crabs (mg/kg ww)	Daily Exposure: Sediment (mg/day)	Daily Exposure: Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV: NOAEL (mg/kg-day)	TRV: LOAEL (mg/kg-day)	Hazard Quotient: NOAEL Hazard Quotient	Hazard Quotient: LOAEL Hazard Quotient
gamma-Hexachlorocyclohexane	0.00089	0.00015	0.00015	0.0000049	0.000032	0.000036	0.000036	42.5	NB	0.00000086	--
Heptachlor	0.0011	0.0009	0.0009	0.000006	0.00019	0.0002	0.0002	9.2	NB	0.000021	--
Heptachlor epoxide	0.0055	0.0052	0.0052	0.00003	0.0011	0.0011	0.0011	NB	NB	--	--
Methoxychlor	0.0021	0.0006	0.0006	0.000012	0.00013	0.00014	0.00014	10	NB	0.000014	--
Toxaphene	0.45	0.055	0.055	0.0025	0.012	0.014	0.014	NB	NB	--	--
Polychlorinated biphenyls	1.2	0.58	0.58	0.0066	0.12	0.13	0.13	0.41	1.8	0.31	0.071
Dioxins/Furans											
2,3,7,8-Tetrachlorodibenzo-p-dioxin	0.0000012	0.00000055	0.00000032	0.0000000066	0.000000091	0.000000098	0.000000098	0.000014	NB	0.007	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	0.00000075	0.00000014	0.000000061	0.0000000041	0.000000021	0.000000025	0.000000025	0.000014	NB	0.0018	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	0.00000054	0.000000022	0.0000000085	0.000000003	0.0000000032	0.0000000062	0.0000000062	0.000014	NB	0.00044	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.0000053	0.00000012	0.000000096	0.000000029	0.000000023	0.000000052	0.000000052	0.000014	NB	0.0037	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.0000036	0.000000023	0.000000025	0.00000002	0.0000000050	0.000000025	0.000000025	0.000014	NB	0.0018	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.000068	0.00000015	0.0000006	0.00000037	0.000000079	0.00000045	0.00000045	0.000014	NB	0.032	--
Octachlorodibenzo-p-dioxin	0.0013	0.000008	0.000028	0.0000071	0.0000038	0.000011	0.000011	0.000014	NB	0.78	--
2,3,7,8-Tetrachlorodibenzofuran	0.0000035	0.00000068	0.0000011	0.000000019	0.00000019	0.00000021	0.00000021	0.000001	NB	0.21	--
1,2,3,7,8-Pentachlorodibenzofuran	0.0000014	0.000000063	0.00000013	0.0000000077	0.00000002	0.000000028	0.000000028	0.000014	NB	0.002	--
2,3,4,7,8-Pentachlorodibenzofuran	0.0000017	0.00000032	0.00000014	0.0000000093	0.000000048	0.000000058	0.000000058	0.000014	NB	0.0041	--
1,2,3,4,7,8-Hexachlorodibenzofuran	0.0000044	0.000000044	0.000000082	0.000000024	0.000000013	0.000000037	0.000000037	0.000014	NB	0.0027	--
1,2,3,6,7,8-Hexachlorodibenzofuran	0.0000018	0.000000018	0.000000021	0.0000000099	0.0000000041	0.000000014	0.000000014	0.000014	NB	0.001	--
2,3,4,6,7,8-Hexachlorodibenzofuran	0.000002	0.00000001	0.000000014	0.000000011	0.0000000025	0.000000013	0.000000013	0.000014	NB	0.00096	--
1,2,3,7,8,9-Hexachlorodibenzofuran	0.00000024	0.000000009	0.000000018	0.0000000013	0.0000000028	0.0000000042	0.0000000042	0.000014	NB	0.0003	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.000021	0.0000001	0.00000015	0.00000012	0.000000026	0.00000014	0.00000014	0.000014	NB	0.01	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.0000011	0.00000001	0.000000017	0.000000006	0.0000000028	0.0000000089	0.0000000089	0.000014	NB	0.00063	--
Octachlorodibenzofuran	0.000031	0.000000037	0.00000024	0.00000017	0.000000029	0.0000002	0.0000002	0.000014	NB	0.014	--
Dioxin/furan TCDD toxicity equivalent	0.0000090	0.0000017	0.0000016	0.000000049	0.00000035	0.0000004	0.0000004	0.000014	0.00014	0.028	0.0028
Inorganic Analytes											
Aluminum	15,000	41	80	82	13	94	94	120	NB	0.79	--
Antimony	13	0.013	0.012	0.07	0.0026	0.073	0.073	NB	NB	--	--
Arsenic	43	0.63	0.72	0.24	0.14	0.38	0.38	10	40	0.038	0.0095
Barium	65	1.2	19	0.36	2.1	2.5	2.5	21	42	0.12	0.059
Beryllium	0.8	0.0019	0.0037	0.0044	0.00059	0.005	0.005	NB	NB	--	--
Cadmium	1	0.01	0.039	0.0055	0.0051	0.011	0.011	1.5	20	0.0071	0.00053
Chromium	80	0.1	0.17	0.44	0.028	0.47	0.47	0.86	4.3	0.54	0.11
Cobalt	8.9	0.09	0.12	0.049	0.022	0.071	0.071	NB	NB	--	--
Copper	200	3.4	14	1.1	1.8	2.9	2.9	47	62	0.062	0.047
Iron	35,000	97	150	190	26	220	220	NB	NB	--	--
Lead	130	0.19	0.24	0.72	0.045	0.77	0.77	3.9	11	0.2	0.07
Manganese	260	7.2	45	1.4	5.5	7	7	980	NB	0.0071	--
Mercury	1.3	0.021	0.022	0.0071	0.0045	0.012	0.012	0.032	0.064	0.36	0.18
Nickel	41	0.52	0.92	0.22	0.15	0.37	0.37	77	110	0.0049	0.0034

Table F-34. (cont.)

Analyte	Concentration Sediment (mg/kg dw)	Concentration Fish (mg/kg ww)	Concentration Crabs (mg/kg ww)	Daily Exposure Sediment (mg/day)	Daily Exposure Food (mg/day)	Total Daily Intake (mg/day)	BW Normalized Exposure (mg/kg-day)	TRV NOAEL (mg/kg-day)	TRV LOAEL (mg/kg-day)	Hazard Quotient NOAEL Hazard Quotient	Hazard Quotient LOAEL Hazard Quotient
Selenium	4.5	0.39	0.27	0.025	0.069	0.094	0.094	0.4	0.8	0.23	0.12
Silver	2.9	0.055	0.19	0.016	0.026	0.042	0.042	NB	NB	--	--
Thallium	0.27	0.0007	0.0012	0.0015	0.0002	0.0017	0.0017	0.24	24	0.007	0.00007
Vanadium	64	0.47	0.41	0.35	0.092	0.44	0.44	11	NB	0.04	--
Zinc	230	39	13	1.3	5.5	6.7	6.7	70	120	0.096	0.056

Note: -- - hazard quotient could not be calculated because there was no TRV available
BW - body weight
CoPC - chemical of potential concern
dw - dry weight
LOAEL - lowest-observed-adverse-effect level
NB - no benchmark
NOAEL - no-observed-adverse-effect level
PAH - polycyclic aromatic hydrocarbon
PCB - polychlorinated biphenyl
TRV - toxicity reference value
ww - wet weight

The following data were used to develop this scenario: surface sediment, crab and fish data collected at reference river stations in 2004 (see Appendix Tables C-2, C-3, C-4, C-5, C-20, C-21, C-23, C-24, C-25 and C-26). Exposure point concentrations are means of detected values. However, if a chemical was undetected in all samples, its concentration was estimated as one-half of the maximum detection limit.

[a] Semivolatile organic compounds and pesticides/PCBs were not analyzed in reference crabs, and therefore fish concentrations were used as surrogate values for calculations.

Table F-34a. Herring gull EPC calculation based on media and prey CoPC data for reference reach of Raritan River

Medium/Prey	Survey Station	Date	Sample ID	Field Replicate	Units	Original Data/ Intermediate Calculation	Arsenic Concentration
Sediment							
	AQUAREF1	10/5/2004	SD0026	0	mg/kg		46.8
	AQUAREF2	10/4/2004	SD0013	0	mg/kg		98.9
	AQUAREF3	10/4/2004	SD0014	0	mg/kg		43.1
	AQUAREF4	10/6/2004	SD0032	0	mg/kg		21.5
	AQUAREF5	10/6/2004	SD0031	0	mg/kg		5.95
						Reference Mean	43.3
						Reference mean - 2 significant digits	43
Fish							
	AQUAREF1	10/7/2004	FI0109-D	1	mg/kg	0.47	
	AQUAREF1	10/7/2004	FI0109-D	2	mg/kg	0.6	
	AQUAREF1	10/7/2004	FI0109-D	3	mg/kg	0.7	
						Field Rep. Average	0.59
	AQUAREF4	10/7/2004	FI0112-D	1	mg/kg	0.67	
	AQUAREF4	10/7/2004	FI0112-D	2	mg/kg	0.67	
						Field Rep. Average	0.67
						Reference Mean	0.63
Crab							
	AQUAREF1	10/5/2004	CompAquaRef1	0	mg/kg		0.72 *J*
	AQUAREF4	10/6/2004	CompAquaRef4	0	mg/kg		0.71 *J*
						Reference Mean	0.72 *J*

Note: Mean detected values used for 2004 reference river surface sediment, fish, and whole crab.
Estuarine fish and crab data were from whole body composite samples.

CoPC - chemical of potential concern
EPC - exposure point concentration
J - estimated value

Appendix G

Laboratory Reports for 2004 Sediment Toxicity Tests

Provided to Exponent in hard copy only.